1

UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

MARSHALL DIVISION

GLOBAL EQUITY MANAGEMENT (SA))

PTY. LTD.,   )

      Plaintiff,   ) CIVIL ACTION NO.

 vs.   ) 2:16-cv-00095-RWS

EXPEDIA, INC.,   ) (Consolidated

      Defendant.   )   Lead Case)

DEPOSITION UPON ORAL EXAMINATION

OF

CRAIG ROSENBERG

9:36 a.m.

September 30, 2016

925 Fourth Avenue, Suite 2900

Seattle, Washington

REPORTED BY: Brenda Steinman, CCR #2717

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1   A P P E A R A N C E S
2
3   FOR PLAINTIFF:
4   WILLIAM P. RAMEY, III, ESQ.
5   Ramey & Schwaller, LLP
6   5020 Montrose Boulevard, Suite 750
7   Houston, Texas 77006
8   832.581.4221
9   wramey@rameyfirm.com
10
11   FOR DEFENDANTS:
12   THEODORE J. ANGELIS, ESQ.
13   K&L Gates
14   925 Fourth Avenue, Suite 2900
15   Seattle, Washington 98104-1158
16   206.623.7580
17   theo.angelis@klgates.com
18
19   FOR DEFENDANTS:
20   JEFFREY GERCHICK, ESQ.
21   Quinn Emanuel Urquhart & Sullivan, LLP
22   777 6th Street Northwest, 11th Floor
23   Washington, D.C. 20001
24   202.538.8128
25   jeffgerchick@quinnemanuel.com

3

1   A P P E A R A N C E S
2   Continued
3
4   FOR DEFENDANTS:
5   TODD M. SIEGEL, ESQ.
6   Klarquist Sparkman, LLP
7   121 Southwest Salmon Street, Suite 1600
8   Portland, Oregon 97204
9   503.595.5300
10   todd.siegel@klarquist.com
11
12
13
14
15
16
17
18   ****** (* Denotes Phonetic Spelling.)
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20
21
22
23
24
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4

1   E X A M I N A T I O N
2   ATTORNEY   PAGE
3   BY MR. ANGELIS: 5
4   BY MR. RAMEY: 140
5   BY MR. ANGELIS: 143
6
7   E X H I B I T   I N D E X
8   EX#   DESCRIPTION   PAGE
9   Exhibit 50   9/7/2016 Declaration of Craig   5
10   Rosenberg, Ph.D.
11   Exhibit 51   Alan Freedman, The Computer   6
12   Desktop Encyclopedia, American
13   Management Association pages
14   921-923
15   Exhibit 52   Exhibit 1. U.S. Patent   13
16   6,690,400 B1
17   Exhibit 53   Exhibit '183. U.S. Patent   103
18   6,401,183 B1
19   Exhibit 54   Exhibit 3. Curriculum Vitae   120
20   for Craig S. Rosenberg, Ph.D.
21   Exhibit 55   Exhibit 2. U.S. Patent   133
22   7,356,677 B1
23
24
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1   SEATTLE, WASHINGTON; FRIDAY, SEPTEMBER 30, 2016
2   9:36 A.M.
3   oo-OO-oo
4   CRAIG ROSENBERG,   witness herein, having been
5   first duly sworn on oath,
6   was examined and testified
7   as follows:
8   E X A M I N A T I O N
9   BY MR. ANGELIS:
10   Q. Good morning, Dr. Rosenberg.
11   A. Good morning.
12   Q. Now, I'd like to begin with your
13   declaration.
14   (Exhibit 50 marked for
15   identification.)
16   Q. (By Mr. Angelis) Can you please turn to
17   paragraph nine of your declaration.
18   A. Okay.
19   Q. Now, I'm most interested in the
20   definitions you have under a, b, and c for the
21   terms emulation, simulation, and virtualization.
22   Do you see those?
23   A. I see this.
24   Q. Now, what is the role of the text in
25   parentheses in a, b, and c?

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1   **A.   I guess examples, examples of emulation,**
2   **simulation, and virtualization.**
3   Q.   In number c, virtualization, does that
4   mean that -- so multiple OS environments on a
5   server is an example of virtualization is what
6   you're saying.
7   **A.   Yes.**
8   Q.   So does that mean that your definition
9   of virtualization is to create or produce?
10   **A.   Yeah, at a high level, in general.**
11   Q.   Let me show you another definition and
12   see if you agree with this definition.
13   (Exhibit 51 marked for
14   identification.)
15   Q.   (By Mr. Angelis) This is what's been
16   marked as Exhibit 51. Let me just take you to the
17   second page here of this document. This is a
18   computer dictionary from 1996.
19   **A.   Okay.**
20   Q.   And the title is, it's Freedman Computer
21   Desktop Encyclopedia.
22   Can you please turn to the definition
23   for virtual machine.
24   **A.   Okay, I see it.**
25   Q.   I'll just read the first part of the

7

1   first definition. It says "A computer that runs
2   an operating system that can host other operating
3   systems or multiple copies of itself."
4   Do you see that?
5   **A.   I do.**
6   Q.   Does this tell one of ordinary skill in
7   the art, is this a reasonable definition of a
8   virtual machine?
9   **A.   I think it's reasonable. I think some**
10   **with skill in the art might consider a virtual**
11   **machine to be the guest OS.**
12   **Are you familiar with host OS and guest**
13   **OS, those terms?**
14   Q.   Why don't you just explain them for the
15   record.
16   **A.   Sure. So the host OS would be, let's**
17   **say, well, in a Type 2 hypervisor, a host OS would**
18   **be the first operating system that boots. And**
19   **then through hypervisor software you could run a**
20   **guest operating system. And then that guest**
21   **operating system that's run on top could be**
22   **considered the virtual machine itself.**
23   **So I would put that as a alternate**
24   **definition of virtual machine.**
25   Q.   And you mentioned a Type 2 hypervisor.

8

1   What do you mean by that term?
2   **A.   Well, so there is -- basically it just**
3   **means that the hypervisor is implemented in**
4   **software that runs on top of the host operating**
5   **system. In a Type 1 it's usually implemented in**
6   **silicon, let's say EEPROM, it's burned into a**
7   **chip. It's still software, but it's loaded into**
8   **the chip and you get greater efficiencies and**
9   **speeds associated with a Type 1, but the concept**
10   **is the same.**
11   Q.   In both a Type 1 and a Type 2
12   hypervisor, you're talking about something that
13   runs both software and hardware; it's a virtual
14   machine that is running in a software and a
15   hardware environment; correct?
16   **A.   I guess I'd want to add a little more**
17   **clarity to that. When you said it runs hardware,**
18   **can you -- I wouldn't characterize it that way.**
19   Q.   It runs on hardware.
20   **A.   Runs on hardware.**
21   Q.   So you're required to have, this virtual
22   machine is depending upon both hardware and
23   software to run.
24   **A.   Yes, all software cannot exist separate**
25   **from hardware. Software doesn't run in a vacuum,**

9

1   **software runs on top of hardware; period. I think**
2   **that's well understood.**
3   Q.   So just to help the court understand
4   things, you're talking about basically a virtual
5   machine, although it's virtual, has actual
6   physical components that exist in physical space,
7   and there is, for example data that would be
8   stored magnetically, for example, on a hard drive
9   as part of this virtual machine.
10   **A.   Yes, that is true. But like I just**
11   **said, software needs hardware to run. Software**
12   **cannot run in the absence of hardware.**
13   **That said, the virtual machine is**
14   **representing a different configuration, a**
15   **different system configuration than the actual**
16   **hardware.**
17   **I'll give a for example. I'll give an**
18   **example.**
19   **If I take Windows 10 and I use Virtual**
20   **PC, which is a Microsoft virtualization product,**
21   **to create a virtual machine of a Windows 95**
22   **computer, the software that's running on the**
23   **Windows 95 virtual machine may -- will think that**
24   **it has different memory resources, different**
25   **network resources, different storage resources,**

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10

1 and different CPU resources than the actual
2 resources that are on the Windows 10 computer.
3   So technically the virtual machine is
4 running on that Windows 10 computer, but the
5 operating system, this Windows 95 operating system
6 that's been set up as a virtual machine and the
7 software that's running on it believes, if we can
8 use that word, that it's running on a Windows 95
9 computer.
10   Q. Fair enough. So in this definition of
11 virtual machine in Exhibit 51, there is a
12 reference, for example, to a Virtual 8086 Mode in
13 a PC starting with a 386 computer.
14   A. Um-hum.
15   Q. That's more or less the same thing you
16 were talking about with a Windows 10 and
17 Windows 95.
18   A. Yeah. Let me just read it for
19 completeness. Okay. I see that, yes.
20   Q. And so you agree that's more or less the
21 same process you were just talking about with
22 respect to Windows 10 and Windows 95.
23   A. I think it's similar. The part that's
24 throwing me just a bit is I'm not sure exactly
25 what they mean by "Computers can be built with

11

1 hardware circuits that support a virtual machine."
2   Maybe they're speaking about the Type 1
3 hypervisor, that I was speaking, where you embed
4 that hypervisor software in circuits.
5   So I'm not sure if they're making a nod,
6 if you will, toward Type 1 hypervisors there, or
7 if they're just saying what I said, which is the
8 virtual machine represents an alternate system
9 configuration, like a Windows 95 configuration
10 with different CPU resources, different network,
11 different memory, different storage. It could be
12 one of those two things.
13   Q. And for what it's worth, I read it as
14 being a nod to the Type 1 issue.
15   A. Yes.
16   Q. Can we just take you back to the first
17 sentence in the definition of virtual machine in
18 Exhibit 51. It says "A computer that runs an
19 operating system that can host other operating
20 systems."
21   Do you see that?
22   A. I see that.
23   Q. And that's a fair definition of the
24 virtualization that we're talking about in this
25 case; isn't it?

12

1   A. Well, again, like I said earlier, I
2 think also one of skill in the art, persons of
3 skill in the art might consider that the virtual
4 machine isn't the computer that runs the operating
5 system that can host other operating systems, but
6 the virtual machine is the instance of the guest
7 operating system.
8   So in my example, it would be that 95,
9 that Windows 95 instance, would be considered the
10 virtual machine. I mean that's usually how I
11 would consider it, not the modern day Windows 10
12 computer.
13   This seems to be saying it's the
14 Windows 10 computer that's able to host other
15 guest operating systems.
16   When I set up multiple virtual machines,
17 I think it would be well understood by persons of
18 skill in the art that that would be setting up
19 multiple instances of other guest operating
20 systems.
21   Q. I understand your testimony.
22   A. Okay.
23   Q. Now, let's turn to -- well, let me just
24 state for the record what I've done is Exhibit 50
25 is your declaration, but it omits the exhibits.

13

1 What I'm going to do is just hand you the exhibits
2 and separately mark them as exhibits, so you don't
3 have a 200-page document that we're trying to
4 navigate.
5   A. That's fine.
6   (Exhibit 52 marked for
7   identification.)
8   Q. (By Mr. Angelis) Dr. Rosenberg,
9 Exhibit 52 is the '400 patent.
10   Now, please take a look at paragraph 16
11 of your declaration, if you would. So here you're
12 talking about a particular claim element from
13 Claim 1 of the '400 patent; correct?
14   A. That's correct.
15   Q. And in particular, it's "means for
16 allocating a computer device's resources to
17 multiple operating system environments,
18 partitioned on individual virtual cabinets, on
19 said computer device."
20   Do you see that?
21   A. I do, yes.
22   Q. So let's just set the table here for a
23 second, and see if we can agree on what this claim
24 term is talking about.
25   We're talking here about graphical user

14

1 interface, and we're talking about means for
2 allocating a computer device's resources.
3   And so this operates at the code level,
4 correct? Means for allocating is something that
5 the computer does based on instructions that are
6 received from code; is that correct?
7   A. I think that's one way to interpret it.
8 **But you could also say it's something that the
9 user does.
10   The graphical user interface is the
11 interface between the user and the computer, and
12 there is much disclosure in the patent about using
13 mice, using point and click, using right clicks,
14 using drags. I mean these are all user actions
15 too.
16   So I would say it's a combination of
17 things that have to happen to invoke the
18 invention; that the user has to interact with the
19 graphical user interface and then the computer has
20 to interpret the actions of the user.**
21   Q. Fair enough. We're going to get to all
22 those parts of your opinions as we go on today.
23   I want to talk about the last part of
24 your answer there where you said "the computer has
25 to interpret the actions of the user."

15

1   What are you referring to in relation to
2 this claim term "allocating a computer device's
3 resources"? What is the computer doing that
4 you're talking about?
5   A. **Well, it's interpreting the input from
6 the human. So I mean there is various ways you
7 can -- there is so many different frameworks and
8 languages; DirectX, OpenGL, GL, Microsoft
9 Foundation Class, Java AWT, Java Swing, I mean it
10 goes on and on, all these different frameworks
11 that you can use to create GUIs that are shown in
12 every figure of the '400 patent.
13   So there is -- each one has its own
14 unique methods that interpret button downs, right
15 clicks, drags. And so I think that's what I was
16 referring to.**
17   Q. That's what I'm getting at as well.
18   A. **Yeah.**
19   Q. So to take this pedestrian example you
20 used at the end of your answer. A user, for
21 example, performs a drag and drop operation,
22 correct?
23   A. **Yes.**
24   Q. That's possible.
25   In the instance in this claim language

16

1 where we're talking about "means for allocating a
2 computer device's resources," what does that
3 instruct the computer to actually do?
4   We'll talk about this on a case by case
5 basis.
6   A. **Um-hum.**
7   Q. But for allocating resources, what does
8 the computer have to do? You would agree that the
9 computer has to take some action at the code level
10 to actually allocate the resources; correct?
11   A. **I do, yeah. I do.
12   But I guess I don't see this patent as
13 being around that part of the invention. I mean
14 even the title, the first words are "Graphic User
15 Interface For Resources Management." Abstract,
16 "This invention is a Graphic User Interface that
17 enables a user."
18   I see the disclosure in this patent, and
19 essentially the whole invention, around the
20 graphical user interface, and not so much as the
21 technical details of how virtualization is
22 accomplished.**
23   Q. Fair enough. That's helpful.
24   And so just so I understand it and make
25 sure we're on the same page, your opinion then --

17

1 and we'll talk about this in detail element by
2 element --
3   A. **Sure.**
4   Q. -- is that this invention is not
5 concerned at all about how the resources are
6 actually allocated.
7   MR. RAMEY: Objection; form.
8   A. **I think that -- I don't know if I want
9 to put a 90 percent/10 percent; I'll probably
10 leave that aside. I mean as far as the vast
11 majority, if not the entirety, of this patent
12 seems to be around the user interface and the
13 novel user interface to graphically configure; so
14 what the user does, how it might be displayed to
15 the user.
16   Yeah, I don't see much -- again, I would
17 need to go through it to look specifically for it,
18 but what happens down at the code level for the
19 repartitioning, if you will, or changing the
20 amount of memory that's available to the process,
21 I don't see that discussed in the patent
22 write-off. I see that more as an issue with '183
23 and '677 patents.**
24   Q. (By Mr. Angelis) That's helpful.
25   Just to take an example, if a user

18

1 performs a drag and drop operation, for example to
2 copy a partition to a particular cabinet that this
3 patent talks about, your opinion is that the
4 patent is concerned with essentially that drag and
5 drop, visually displaying that drag and drop, as
6 opposed to what the computer is instructed to do
7 to actually copy that partition into a particular
8 virtual storage area.
9   A.   Yes. I would say the invention that
10 seems to be disclosed is the front end. It's that
11 graphical user interface to allow for a much more
12 user friendly manipulation of your virtualization
13 environment as opposed to, let's say a command
14 line interface, where you would have a command and
15 many different options that would be far less
16 intuitive and usable from a human factors
17 perspective.
18   Q.   So it's fair to say the invention isn't
19 concerned about how the copying occurs, or even
20 whether or not it occurs, it's just the interface
21 for asking it to occur.
22   A.   Yeah. I think it's pretty clear that --
23 I wouldn't go to say whether or not it occurs; it
24 seems to me that the patentee, my understanding
25 from reading the patent is that it had some

19

1 software that was doing this, and he wasn't just
2 making a GUI that wasn't connected to anything in
3 the background.
4   But I would agree with your
5 characterization that the invention seems to be,
6 to me seems to be all about the front end, or the
7 user interface, and how that could work to create
8 a more usable user interface for allocating
9 resources and modifying resources of virtual
10 environments -- of virtualized environments.
11   Q.   So drag and drop was something that was
12 pretty well known at this time, wasn't it, in the
13 1998, early 1999 time frame?
14   A.   Yes.
15   Q.   So we're not talking here about the
16 invention of the drag and drop technology.
17   A.   No. I would think it would be the
18 application of various standard UI, UI widgets or
19 UI elements, such as right click menus, drop
20 downs, check boxes, icon bars, button bars, drag
21 and drop.
22   I mean all of these are standard
23 traditional user interface widgets, if you will,
24 or interaction techniques. And they were
25 incorporated into the creation and modification of

20

1 a virtualized -- into creation and modification of
2 virtualized operating systems. So utilizing
3 existing UI interaction techniques and widgets.
4   Q.   So this was an application essentially
5 of what you called standardized, we'll call them
6 widgets, basic UI functionality components, into
7 the context of a graphical user interface related
8 to managing a virtualized system; is that fair?
9   A.   Yes.
10   Q.   Let me back up one paragraph, where we
11 were before, and talk about paragraph 15 for a
12 minute. This contains a basic overview of the
13 '400 patent and then concludes with an opinion
14 sentence. And I just want to make sure I
15 understand what you're saying here.
16   Take a minute to read paragraph 15,
17 please.
18   A.   Okay.
19   Q.   So based on this paragraph, it's fair to
20 say your opinion is that the claimed graphic user
21 interface enables a user to virtualize a computer
22 system; is that correct?
23   A.   Not exactly. I think that it allows
24 them to create virtual cabinets, which specify the
25 resources of a virtual -- virtualized operating

21

1 systems in a much more intuitive and user friendly
2 manner. And not only create, but create and/or
3 modify or delete.
4   Q.   And are they creating the cabinets or
5 are they creating a graphical representation of
6 the cabinets?
7   A.   Well, the cabinets themselves are a
8 graphical representation. This is -- there is a
9 term in data centers, cabinets, the 19-inch racks
10 that represent where the computer systems --
11 usually they're rack-mounted computers that are in
12 these 19-inch racks that are called cabinets, so
13 tall cabinets. So this represents that in a
14 graphical format, if that's what -- I want to be
15 responsive to your question -- if that's what your
16 question is.
17   Q.   Let me ask it in this way. The creation
18 of the cabinets is not the subject of the '400
19 patent invention; is it?
20   A.   I think that's part of it. The
21 graphical -- the look of the cabinet, the fact
22 they called it a cabinet. It's a collection.
23 It's a container, if you will, in which various
24 properties can be stored associated with the
25 virtualized system.

22

1   Q.   Let me take you back to what you just
2 testified to about these physical racks that
3 occur, these 19-inch racks where there were
4 computer systems that were actually created.
5 Those are the type of systems that have hardware
6 and software that we were talking about before,
7 those are actual physical systems; correct?
8   A.   Um-hum. Yes.
9   Q.   And the cabinet that you're talking
10 about is not a physical system that's being
11 created; is it?
12   A.   No, it's not.
13   Q.   So you're talking about an image of a
14 cabinet essentially; correct?
15   A.   Well, that's part of it. Part of it is
16 the image. But then there is the underlying
17 properties that represent, well, the various
18 attributes that the cabinet can contain; what kind
19 of operating system, is it password protected, is
20 there remote access, where the partitions lie,
21 what the name is, what the icon. So there is
22 various properties that are contained within this
23 virtualized graphic representation. It doesn't
24 stop, just drawing a rectangle.
25   Q.   Fair enough. We'll talk about that in a

23

1 minute.
2   In the second sentence of paragraph 15
3 here you talk about the graphic user interface
4 enabling a user to define a secondary storage
5 physical device -- or secondary storage physical
6 devices; is that right?
7   A.   I see that, yes.
8   Q.   And so it's your opinion that the
9 claimed graphic user interface does enable a user
10 to define a secondary storage physical device.
11   A.   Yes.
12   Q.   And is that more or less what you meant
13 by your statement that "In my opinion, the '400
14 patent claims a graphic user interface for
15 displaying virtualized storage devices of an
16 operating system independent storage
17 virtualization system"?
18   A.   Yes, it is.
19   Q.   What are virtualized storage devices
20 that you're talking about there?
21   A.   Okay. So it goes back to our discussion
22 earlier about what is virtualization. I mean
23 there is some graphics in, I think the '183 that
24 could be helpful for it.
25   But basically if you have a physical

24

1 disk, which would be your physical disk, one
2 software, hypervisor software, virtualization
3 software can create one or more virtual storage
4 devices out of that physical disk by defining
5 various partitions that are allocated for that
6 virtualized storage. And that disk can represent
7 a different disk, you know. Your Windows 10 disk
8 could be utilized to create a guest OS of a
9 Windows 95 disk, and you could use a portion of
10 your physical disk to represent your Windows 95
11 disk. So that would be an example of a
12 virtualized storage.
13   Q.   So in layperson's terms, you would
14 say -- and to not oversimplify -- a portion of a
15 hard disk if properly configured could be
16 essentially a virtualized storage device.
17   A.   Yeah, or even the entire thing, the
18 entire thing or a portion of.
19   Oftentimes one might want to create
20 several portions to represent several different
21 resources. Each could have -- you know, be
22 bootable, depending on which is pointed to. And
23 each could be loaded with different operating
24 systems and different applications.
25   Q.   So one could be a Windows 10 portion,

25

1 one could be a Linux portion, one could be even a
2 macOS portion.
3   A.   That's correct, yes.
4   Q.   And what is an operating system
5 independent storage virtualization system?
6   A.   Operating system independent, that's
7 basically just what we're talking about here.
8 It's -- so the storage system is, like I said, the
9 disk that's been partitioned into multiple pieces,
10 and then the operating system independent is kind
11 of like your example where you have Linux on one
12 partition and Mac on another and Windows on a
13 third.
14   Q.   So virtualized storage device in a
15 storage virtualization system more or less the
16 same thing, or is a virtualized storage device one
17 part of, so multiple virtualized storage devices
18 could be part of a storage virtualization system.
19   A.   Yes. I would characterize it that way.
20   Q.   And what we were just talking about was,
21 again in the physical world, it wasn't just a
22 graphical representation, we're talking about
23 actually physically creating disk partitions;
24 correct?
25   A.   I think mostly we were. But there is

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8 (Pages 26 to 29)

26

1   software that aids in that. I mean you don't go
2   in there with your hands and create the disk
3   partitions. It's software that controls the
4   read/write heads and actually is changing sectors
5   and partitions.
6   Q. Fair enough.
7   So turning back to paragraph 16, which
8   we just talked about briefly, and the claim
9   language. Just so I'm clear on this, what does it
10 mean to allocate a computer device's resources to
11 multiple operating system environments?
12   A. Okay. So going back to what we were
13 talking about earlier where, let's use our example
14 of a Windows 10 computer, that's a modern 2016
15 computer, and we're trying to create, let's say a
16 Windows 2000 instance of an operating system and a
17 Windows 95 instance, so these are older, older
18 operating systems that were developed to run on
19 older hardware.
20   So the means for allocating the computer
21 device's resources, that's a way to allocate the
22 modern CPU and disk and memory of your 2016
23 Windows computer to these multiple, in my example
24 older, it doesn't have to be older, but in my
25 example older 2000, Windows 2000 and Windows 95

27

1   environments. So you're allocating the disk,
2   potentially the network card, the CPU, the memory,
3   so that each of those guest OSes believe that they
4   are -- they have dedicated hardware.
5   They don't actually. They don't. All
6   of these can run simultaneously. You could have
7   multiple users using each of those OSes, and
8   they're all really sharing the same real physical
9   CPU and physical disk, but each those OSes, those
10 guest OSes that have been virtualized, believe --
11 if I can use that word again -- have been
12 programmed to understand -- that's probably not
13 the best choice of words, but I think you
14 understand -- you may understand what I'm meaning
15 here is that the guest OS -- to the guest OS it is
16 as if it has dedicated hardware that would be
17 typical and appropriate for the time that that OS
18 was developed, I guess is the best way to put it.
19   Q. Let's take an example. For example, a
20 data file that we're going to allocate, we're
21 going to allow two different operating system
22 instances to have access to. That would be within
23 the scope of this claim element; would you agree?
24   MR. RAMEY: Objection; form.
25   A. Yeah. I see nothing in the claim

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1   element that limits, that limits that use case, if
2   you will.
3   Q. (By Mr. Angelis) So what steps would
4   the computer need to perform to allocate that data
5   file to multiple operating system environments, we
6   can call them cabinets, if you'd like?
7   A. Okay. And I'll just modify your
8   question a little bit to what steps the user and
9   the computer would need to perform, because the
10 computer doesn't perform things on its own.
11   Q. Fair enough.
12   A. The user would utilize software to
13 invoke an intention, if you will, of what the user
14 wants to have happen.
15   So at a high level and in general, the
16 user would use virtualization software and
17 potentially a slick user interface, such as
18 described here in the '400 patent, a graphical
19 user interface, not necessary though.
20   But to answer your question strictly,
21 what steps would be needed to have two different
22 operating systems access the same data file? I
23 just want to make sure I understand your question.
24   Q. That is the question.
25   A. Yes. So you would use virtualization

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1   software to set up one guest operating system.
2   You would load the operating system, you would
3   load any applications that you wanted, you would
4   load any data files that you wanted, presumably
5   this one data file we're talking about in the
6   second. And then the user would go on to set up a
7   second environment with a different operating
8   system, a different set of applications most
9   likely, and potentially that same data file that
10 you're talking about. So now at the end of all
11 that you have two different guest OSes that can
12 each access the same data file.
13   Q. And at the system level what does the
14 computer have to be instructed to do to make sure
15 that that data file is available for both
16 instances?
17   A. Well, it's a pretty open-ended question.
18 But typically when you load a file onto a
19 computer, whether it's virtualized or not, it's
20 copied from one storage media to another. So the
21 file doesn't exist in thin air and gets onto a
22 hard disk; maybe it came from a USB stick, or from
23 the Internet, or from a floppy disk, or a CD-ROM
24 or something. It's copied. A data file is copied
25 from one storage medium to another storage medium.

30

1   So if you're asking physically what
2 happens, is that file is copied across onto the
3 virtualized disk resources for the first guest OS.
4 And in the same way it's copied from wherever it
5 originally existed to the second guest -- the
6 virtualized storage resources of the second guest
7 OS.
8   Q. Have you personally seen computer code
9 that accomplishes this task of allocating a file
10 to multiple operating system environments?
11   A. If you're ask -- well, first off, like I
12 said, whether or not it's virtualized or not, this
13 act of copying of -- it seems to me your question
14 is mostly about how is a file copied from one
15 place to another. Whether or not it's copied into
16 a virtualized OS or not, the mechanism is the
17 same.
18   And if you're asking have I seen low
19 level system -- I mean I've written code to copy
20 files from one place to another, so I guess
21 technically, yes, I have seen code.
22   If you're asking have I seen source code
23 for hypervisors, which is a much more narrow
24 question, the answer would be no, I haven't seen
25 source code for hypervisors.

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1   Q. You anticipated one of my follow-up
2 questions, which is have you seen -- well, let me
3 ask you this first.
4   Have you used a Flash VOS product that
5 is referred to in the '400 patent?
6   A. I have not.
7   Q. Have you seen the code for that product?
8   A. I have not.
9   Q. Let's just talk briefly about, we talked
10 about, well, consider a technologically simple
11 case, which is allowing a data file to be accessed
12 by two different virtual environments. What about
13 an application? Because I think one of the things
14 that we talked about is having an application be
15 accessible by two different operating system
16 environments.
17   Have you seen code that allows that to
18 happen?
19   A. Okay. So it could be two different
20 things you're talking about here, I just want some
21 clarity.
22   It could happen in the sense of -- it
23 could happen in the -- so like I described with
24 the data file, in that example the data file was
25 loaded into the guest OS A, I'll call it, and then

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1 that same data file was loaded into guest OS B.
2 So in the same way a given application, as long as
3 both operating systems support that environment --
4 support that application, maybe -- a better way to
5 say it as long as -- yeah, I guess that's the best
6 way to say it.
7   So an application needs to run under an
8 operating system that supports it. You can't load
9 a Windows program into Linux, let's say, and
10 expect it to run.
11   So we're talking about a situation here
12 where you have two guest OSes and you're asking
13 can the application be shared in some way. And in
14 my mind that can be accomplished in two different
15 ways.
16   It can be loaded, as long as the OS
17 supports it, let's say Windows 95 and 2000, you
18 could load the application under Windows 2000, you
19 could load it under Windows 95, and as long as
20 that application will run under both environments
21 you could utilize each guest OS and utilize your
22 application.
23   There is a second way, VMware Fusion I'm
24 thinking of, which is an application by VMware, it
25 runs on Mac. It allows you to have a Windows

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1 interface, a window that looks like the Microsoft
2 Windows Operating System, and you can launch
3 Windows applications.
4   You have to ask I think a very more -- I
5 want to really understand your question, because I
6 want to be responsive to your question.
7   Typically I think the catch here, what
8 I'm trying to say is that the application needs to
9 run under a certain OS. So you can't -- with a
10 data file -- I didn't talk about this with the
11 data files, but like with Fusion you can have a
12 single data file that the Windows, the virtualized
13 Windows can operate on that data file, and then
14 you go over to the Mac side, and they're both side
15 by side, they're running side by side, it can
16 operate on that same data file too because they
17 have a way to share partitions. It's very slick
18 actually.
19   What I spoke about earlier was kind of
20 separate. Remember, I said you load the guest OS
21 A and B, and you load the same data file on each,
22 and you can work in either one, but it doesn't
23 mean that they're shared. Once that data file
24 starts to be edited and modified, they're not
25 synched across, it's not the same data file

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1 anymore.
2   **Is that clear?**
3   Q. It is. That's all very helpful.
4   The VMware solution that you were
5 talking about --
6   A. Yes.
7   Q. -- that's really essentially emulating
8 the operating system in instance one into instance
9 two to allow an application to essentially run in
10 its non-native operating system.
11   Is that how it works more or less?
12   **A. Well, I wouldn't call it emulation, it's**
13 **definitely virtualization. Emulation has a**
14 **different meaning. But virtualization -- it's a**
15 **virtualized Windows Operating System that runs**
16 **under macOS X.**
17   Q. So you're essentially creating a new
18 virtualized instance within an instance to allow
19 that application to run.
20   **A. You're creating -- yeah. Windows**
21 **becomes a guest OS running under the host OS,**
22 **which is OS X.**
23   Q. So all of the things we've been talking
24 about, these occur at the system level, and these
25 are not the kinds of things that are discussed in

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1 the '400 patent at all; is that right?
2   MR. RAMEY: Objection; form.
3   **A. Well, when you say all the things that**
4 **we're talking about, we've talked about graphical**
5 **user interface some, so obviously that part is**
6 **covered by the '400 patent.**
7   **The copying files at the low level, you**
8 **know, loading applications, that doesn't seem to**
9 **be -- well, if you ask your question, I'll try to**
10 **answer.**
11   Q. (By Mr. Angelis) Sure. And that's what
12 I was getting at. The things we've talked about;
13 the copying files at a low level, and the
14 virtualization we've been talking about, the
15 different solutions for sharing an application,
16 those are not things that are covered in the '400
17 patent; correct?
18   MR. RAMEY: Objection; form.
19   **A. I would agree with that, yeah.**
20   Q. (By Mr. Angelis) So let's turn to
21 paragraph 19.
22   **A. But I just want to make sure I'm clear**
23 **on that. I would agree with that to the -- I mean**
24 **this does allow operations, such as copying and**
25 **modifying, but it doesn't talk about the low level**

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1 **underlying code to accomplish it; it's just**
2 **assumed that that happens downstream.**
3   **I don't want to discount what is spoken**
4 **about in terms of what the user does to**
5 **manipulate, to express their intention in a**
6 **graphical way for what happens in a sense.**
7   Q. So in paragraph 19 you're referring here
8 to particular things that you looked at to respond
9 and analyze -- to respond to and analyze
10 Mr. Goodin's opinions.
11   Is that a fair characterization of
12 paragraph 19?
13   **A. Yes. And I also reviewed Mr. Goodin's**
14 **declaration.**
15   Q. In paragraph 19, this is the complete
16 list of what you relied on; right? You relied on
17 the '400 patent specification, the '677 patent
18 specification, the '183 patent specification, and
19 then your knowledge of the ordinary skill in the
20 art.
21   **A. Yeah. I think I was also shared early**
22 **on a draft claim construction that -- but I didn't**
23 **necessarily rely on it, because my opinions here**
24 **in this declaration are not around construing**
25 **claim terms. It was just strictly around finding**

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1 **structure for functions that are, you know,**
2 **finding structure for claim terms.**
3   Q. So starting first with the '400 patent
4 specification, is it fair to say that the opinions
5 that you have in paragraphs 20 to 24, for those
6 opinions the only substantive information that's
7 discussed is from the specification of the '400
8 patent?
9   **A. Let me just quickly review it. Well, at**
10 **the bottom, the bottom of 22, "One of ordinary**
11 **skill in the art would understand a virtual**
12 **representation as a graphical representation,"**
13 **that comes from my many years of practice in the**
14 **field and education.**
15   Q. Fair enough. And I should have modified
16 my question to say that the substantive
17 disclosures here are based on your skill in the
18 art, as well as the '400 patent. And by "here" I
19 mean paragraphs 20 to 24.
20   **A. In 24 it says, the first sentence one of**
21 **ordinary skill in the art could create a graphic**
22 **representation of the cabinet from the teachings**
23 **of '400, '677, '183. Namely, the '400 patent**
24 **references prior art systems for displaying --**
25 **able to create a graphic representation based**

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1   on --
2   Q.   You don't actually mention any substance
3   from the '677 --
4   A.   Oh, no.
5   Q.   -- patent or the '183 patent; correct?
6   A.   No. If that's what you're asking, I'm
7   not pulling in any substance from this sentence.
8   Q.   So the opinions in paragraphs 20 to 24
9   are based on your skill in the art and the
10   disclosures of the '400 patent; is that correct?
11   MR. RAMEY: Objection; form.
12   A.   Well, I just wouldn't characterize it
13   quite that way, just because there is disclosure
14   in the '677 patent regarding various flow charts
15   and class diagrams that I think would give one of
16   skill in the art additional valuable information
17   that would aid him or her in creating such an
18   invention.
19   Q.   (By Mr. Angelis) Are you relying on --
20   so your opinions rely on more than the '400 patent
21   in paragraphs 20 to 24.
22   A.   Well, it depends on which specific
23   opinion. If we're just talking about -- if we're
24   narrowly talking about how the graphics are
25   defined, and how they look like, and what kind of

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1   user interface operations are enabled by those
2   graphics, then that would just be purely the '400
3   patent.
4   If it's then trying to tie it to the
5   back end, so that there is something that the
6   computer system does, you know, more so than just
7   manipulating graphics on the screen, like actually
8   partitioning a hard disk, then I think the '677
9   and '183 add valuable information for one of skill
10   in the art to practice said invention.
11   Q.   So maybe you could help me understand in
12   paragraph 24 what you're referring to -- well,
13   let's do it this way. Why don't we go paragraph
14   to paragraph, and then when we get to paragraph 24
15   you can let me know what you're relying on from
16   the '677 patent.
17   A.   Um-hum.
18   Q.   So in paragraph 20 you start by listing
19   four elements that you characterize as substantial
20   structure.
21   Do you see that?
22   A.   I see that, yes.
23   Q.   And then right after that you note that
24   the cabinet selection bar graphically represents
25   at least one virtual cabinet, and that at least

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1   one virtual cabinet represents a discreet
2   operating system. Is that correct?
3   A.   I see that, yes. That's correct.
4   Q.   Are you opining that these structures
5   perform any function?
6   A.   I think that's the intent of the patent,
7   yes.
8   Q.   So what function do these -- what
9   function do these structures perform? Let's start
10   with the main menu bar.
11   What function is that performing?
12   A.   Well, it depends on how it's mapped.
13   The main menu bar, is that number 60 in Figure 1?
14   Q.   Are you relying on that main menu bar to
15   perform the function that is in the claim that
16   we're talking about, which is the means for
17   allocating?
18   A.   Possibly. It really depends on exactly
19   what's under -- what's under these menu options.
20   So like there is -- I'm looking at Figure 1 now
21   of, I guess Exhibit 51 -- 52 rather. So the main
22   menu bar I believe is probably 60. I haven't
23   reviewed -- I would need to review it to confirm
24   that, but it's probably 60. And there is
25   partition, is one of the menu options. So when

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1   you click on that, when a user clicks on it, it
2   will drop down, and there may be various functions
3   associated with partitioning the selected cabinet.
4   So that would -- that's an example of the
5   graphical user interface performing a function.
6   Q.   Is there any disclosure in the '400
7   patent of what is underneath these individual
8   items in the main menu, what you're referring to
9   as the main menu bar, item 60 of Figure 1 of
10   Exhibit 52?
11   A.   I would have to -- I would have to look
12   for that. I think there is probably multiple ways
13   to get at it.
14   In user interfaces there is often
15   multiple ways; you could double click to perhaps
16   open a dialogue. You could right click and then
17   see various options there. You could use a menu
18   bar. So I don't -- I'm flipping through the
19   figures. I don't believe I saw a figure with the
20   menu bar expanded, if that's your question.
21   Q.   That is the question.
22   A.   So I'm flipping through the figures
23   looking to see if I see that. But, you know, to
24   give a complete answer, I'd want to review the
25   specification too to see if they talk about what's

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1 under the menu bar.
2   In my example of partition, I think it
3 was in 16 and 17. In Figure 16 and 17 there is
4 various options associated with disk partitions.
5   So like I said, there could be multiple
6 ways to get at this dialogue, maybe by double
7 clicking on the cabinet itself. By selecting it
8 once and hitting the partition menu, there could
9 be an option there. There could be an option to
10 get to it through a right click.
11   So it's very common in these kinds of
12 user interfaces for there to be more than one way
13 to get at these dialogues. And there is
14 disclosure of how the user here can set up various
15 sectors, the size of the sectors for a physical
16 disk.
17   Q.   And here you're referring to Figure 16,
18 correct?
19   A.   16 and 17.
20   Q.   We'll come back to those. But you're
21 not tying those necessarily to the menu bar, is
22 what you're saying.
23   MR. RAMEY: Objection; form.
24   A.   Not necessarily. But like I said,
25 getting this dialogue to come up, I think I

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1 mention three possible ways, and there could be
2 others too.
3   Q.   (By Mr. Angelis) Let's turn to
4 paragraph 21. In this long paragraph you begin
5 with a block quotation from Column 5 of the '400
6 patent; correct?
7   A.   I do, yes.
8   Q.   And early on in that block quotation you
9 say that users can allocate and manage resources
10 by defining one or more cabinets.
11   Is that correct?
12   A.   I see that, yes.
13   Q.   And then it says, a little further down,
14 that "This resource allocation and management is
15 performed graphically with a pointing device
16 and/or keyboard."
17   A.   Yes, I see that.
18   Q.   And then toward the bottom of the
19 quotation it says "This invention provides, inter
20 alia, means for manipulating cabinets. This
21 manipulation comprises adding partitions, deleting
22 partitions, naming the cabinet," and so on.
23   Do you see that?
24   A.   I do, yes.
25   Q.   So when a user uses a pointing device to

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1 tell the computer system to, for example allocate
2 a resource to a cabinet, what is the low level
3 code doing to execute that operation?
4   A.   Well, I guess in the case of
5 partitioning a hard disk it would be instructions
6 for the disk controller to repartition and
7 reformat.
8   Q.   Anything else?
9   A.   Well, it could be, like in the case of
10 passwords or remote access, it would be setting
11 properties associated with network or encryption.
12 I think there is discussion of changing the name
13 or changing the icon; so those would be more at
14 the higher level of the front end GUI.
15   I mean these are all just different
16 options that the inventor realized were common at
17 the time of the invention. Setting the version
18 number, I see, looking at Figure 3.
19   Q.   You would agree that the specification
20 of the '400 doesn't talk about the particular
21 instruction that the computer executes, for
22 example, to perform the repartitioning and
23 formatting that you talked about.
24   A.   I would agree.
25   Q.   So it's fair to say that your opinion is

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1 that the algorithm for using a pointing device to
2 instruct a general purpose computer -- well, let
3 me say that a different way.
4   Basically this paragraph is a disclosure
5 of how to use a pointing device to initiate a
6 particular operation, but says nothing about the
7 operation itself.
8   A.   I wouldn't characterize it quite that
9 way. I think it's clear to the user what they're
10 doing. They're not just moving graphics around on
11 the screen with no effects. The user has an
12 agenda, they have a goal, and they utilize the GUI
13 to accomplish that goal.
14   I would agree with you that the patent
15 doesn't talk about the lower level computer
16 instructions that carry out the goal. The '400
17 patent seems to be fully focused on the front end
18 and that user interface, and the inventive
19 element, if you will, of this patent is the
20 application of this graphical user interface to
21 creating, manipulating, editing, deleting
22 virtualized environments.
23   So I think to answer your question, the
24 user -- I believe I've already answered it, but
25 the user has a task, they have a goal in mind of

Rosenberg, Craig

September 30, 2016

13 (Pages 46 to 49)

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1 what they want to do, and they believe by -- it's
2 very clear in using the user interface that that
3 will happen. I mean if they change the name --
4   I don't want to just speak without
5 answering a pending question, so if you could just
6 restate the question I'll try to be very clear and
7 concise.
8   Q.   Sure. Let me ask you this. Would you
9 agree that there are many ways, or at least there
10 is more than one way that a system might
11 accomplish the task that the user has in mind,
12 that the user asks the system to perform?
13   A.   I would agree, yes.
14   MR. ANGELIS: Do you mind if we take
15 like five minutes.
16   MR. RAMEY: Of course.
17   (Recess 10:37 a.m. to 10:48 a.m.)
18   Q.   (By Mr. Angelis) Just before our break,
19 Dr. Rosenberg, you mentioned the application of
20 the graphical user interface in your answer, and I
21 just want to make sure I understand what you're
22 talking about there.
23   There you're talking just about the
24 user's intentionality of, for example clicking on
25 something or dragging and dropping something to

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1 express to the system that the user would like
2 some operation to happen.
3   A.   Yes.
4   Q.   Let's talk about the natural language
5 algorithm in paragraph 21.
6   A.   Okay.
7   Q.   So would you agree that an algorithm is
8 a series of steps for accomplishing some goal? Is
9 that a fair definition of an algorithm?
10   And feel free to modify it, if you'd
11 like.
12   A.   Um-hum.
13   Q.   I'm sorry, I need an audible "yes" or
14 "no."
15   A.   Yeah, I'm just considering, considering
16 my response. I think certainly a set of steps for
17 accomplishing a goal would be considered an
18 algorithm, yes.
19   Q.   So can you please tell me the steps that
20 the natural language algorithm in paragraph 21
21 discloses.
22   A.   Let's see. Displaying the cabinet
23 selection button bars, displaying their contents.
24 The contents of all secondary storage devices is
25 where they're found, or found in the computer

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1 systems are depicted in secondary storage
2 partition.
3   So the first steps would be displaying
4 the representation of the system resources, as
5 represented by the virtual cabinets.
6   The second step would be virtually
7 copying from secondary storage to the active
8 cabinet by using an input device, such as click
9 and drag.
10   You have to show the user what they're
11 going to operate on. Then you have to allow the
12 user a action to accomplish their intention.
13   On the beginning of the following page
14 it talks about using a mouse or double clicking,
15 so more disclosure about what the action is. Just
16 additional methods, such as right clicking.
17   These are all various ways that one
18 can -- the user can express their intention to the
19 system about what goal they want to have happen.
20   Like I said earlier, there is oftentimes
21 in GUIs multiple ways to do the same thing; click
22 and drag, double click, a menu bar.
23   In general the steps would be displaying
24 to the user what they're going to operate on,
25 providing various options to the user what they

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1 can do, and then the user utilizing one of their
2 options to express their intention to the system.
3   Q.   So in the end the purpose of the
4 algorithm is for the user to express an intention
5 to the system; correct?
6   A.   Yes, but I think it's well understood by
7 one of skill in the art that there is some
8 downstream process that actually modifies the
9 virtual guest OS in some way.
10   Like we were speaking about earlier,
11 it's not changing graphics for the sake of
12 changing graphics, it's changing the graphical
13 representation in the system for the express
14 purpose of modifying the properties of that
15 virtual operating system.
16   Q.   But the '400 patent doesn't disclose
17 those downstream processes; correct?
18   A.   That's correct.
19   Q.   Let's turn to paragraph 22. You begin
20 this paragraph by saying "a cabinet is a virtual
21 storage device capable of containing virtualized
22 operating systems, application software, databases
23 and memory, or partitions of any of the
24 preceding."
25   Do you see that?

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1   A. I do, yes.
2   Q.   And a cabinet is a virtual machine of
3 the type we were previously discussing.
4   MR. RAMEY: Objection; form.
5   A. I would say it represents a virtual
6 machine. These cabinets that are in the pictures,
7 in the figures of the '400 patent, are
8 representations of virtual machines that we were
9 discussing earlier, yes.
10   Q.   (By Mr. Angelis) And you've anticipated
11 my questions, to some extent, so let me just drill
12 down on that a little bit.
13   The virtual machine is a physical --
14 it's a tangible thing that has physical
15 properties; correct?
16   A.   That's a -- I don't know if I would
17 agree with that. I mean it's almost like saying
18 an application software -- Microsoft Word is a
19 physical thing that has tangible properties. I
20 mean that's I think a stretch to say software is a
21 physical thing that has tangible properties. It
22 really straddles the line in so many areas.
23   Certainly a disk, a physical disk that's
24 partitioned and formatted, one could look at it
25 under a microscope and make observations about

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1 various physical attributes of that disk.
2   So much about virtualization is software
3 and properties. So can you really say software is
4 a physical thing with tangible properties? You
5 really have to get down to the microscopic level
6 and look at silicon and the magnetic substrate of
7 the disks and the dipoles that are representing
8 the ones and zeros, I think to get to the level
9 you're saying, which is it's a physical thing.
10 Ultimately it's all a physical thing, once you're
11 down -- you're inspecting at a microscopic level,
12 but I think that's far beyond the question you're
13 asking.
14   Software -- it would be hard pressed for
15 I think many people of skill in the art to say
16 software is a physical thing. And so much about
17 virtualized operating systems and virtualized --
18 this whole environment is software.
19   Q.   Let me ask two follow-up questions,
20 because I think -- I appreciate your answer in
21 trying to be precise, but I think you may have
22 misunderstood my question.
23   The virtual storage device is more than
24 just a picture; correct?
25   A.   Yes. Yes. Perhaps I'm reading too much

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1 into your question.
2   Q.   Fair enough. And you don't mean to
3 change any of your testimony earlier in the
4 morning when we were talking about virtualized
5 systems, and their use of memory for example, and
6 their use of hard drives, those sorts of things.
7 You don't mean this answer you just gave to change
8 any of that testimony; do you?
9   A.   No, I don't think so.
10   But ask your question again about when
11 you said the virtualized hard disk is a physical
12 thing.
13   Q.   It may have just been a bad question.
14   A.   Yeah.
15   Q.   I think the follow-up questions have
16 helped us.
17   A.   Okay.
18   Q.   So then at the end of this paragraph in
19 22 you have this sentence that says, "One of
20 ordinary skill in the art would understand a
21 virtual representation as a graphical
22 representation."
23   Do you see that?
24   A.   Yes, I do.
25   Q.   So how does a virtual representation

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1 differ from a virtual storage device?
2   A.   Well, they're very different. So
3 virtual representation is a graphical
4 representation, it's a representation on the
5 screen, in this case it's 2D computer graphics.
6   A virtualized storage device, like we
7 spoke about earlier, is a physical disk that's
8 partitioned into one or more areas, one or more
9 partitions that can each contain a file system, an
10 operating system, a set of applications, a set of
11 data.
12   So a virtual -- so software allows for
13 that partitioning of the physical disk, the
14 hypervisor software allows for that partitioning,
15 and that's what we're talking about when we talk
16 about a virtualized disk. And a virtual
17 representation is just a GUI basically, graphical
18 user interface.
19   Q.   So you're making a distinction between
20 the virtual storage device and the graphical
21 representation of the virtual storage device.
22   A.   Yes.
23   Q.   And it's your opinion that the claim at
24 issue here is directed -- not directed to the
25 virtual storage device itself and the manipulation

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1 of that, but rather the image that graphically
2 represents the storage device.
3   A. That's correct, yes.
4   Q. Now, looking at the claim language
5 itself -- and if you want to refer back, obviously
6 you can look at the patent itself or it's also in
7 paragraph 16 of your declaration.
8   A. Okay.
9   Q. Now, the claim says that it's a means
10 for allocating rather than being a means for
11 displaying.
12   How do you square your opinion with the
13 means for allocating, requiring there actually be
14 means for allocating, as opposed to means for
15 displaying particular information?
16   MR. RAMEY: Objection; form.
17   A. Well, to me everything in this patent is
18 all about the user interface; that's what they're
19 talking about here. So when I read it, it's a
20 graphic user interface for displaying -- I sort of
21 substitute the word "the" in there, a graphic user
22 interface for displaying the means for allocating.
23   So what the purpose of this graphic user
24 interface is, the downstream purpose is ultimately
25 to allocate resources for multiple operating

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1 systems. But the invention is all about the
2 graphic user interface. Everything in the patent
3 specification and the claims themself seem to be
4 talking about the graphic user interface.
5   And like I said earlier, it's not
6 manipulating graphics for the sake of manipulating
7 graphics; the intention of the user is to allocate
8 resources, but the function is manipulating the
9 graphics. And the structure is the graphics
10 themselves and the operation that's allowed on
11 them; like double clicking, and right clicking,
12 and click and drag.
13   Q. (By Mr. Angelis) Have you finished your
14 answer?
15   A. Yes.
16   Q. We've been talking a lot about the user
17 in some of our questions and in some of your
18 answers. Who is the user, in your opinion?
19   A. Anybody who wants to create or configure
20 or modify a virtualized environment.
21   Q. And the '400 patent talks about
22 superusers, for example. Is that kind of who you
23 have in mind as to who's making these kinds of --
24 who's engaging in these kinds of operations?
25   MR. RAMEY: Objection; form.

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1   A. It could be a superuser. Superuser is a
2 class of users that typically have root password.
3 It sort of comes from the UNIX domain where
4 superusers would have what is known as root
5 password or essentially permissions to change or
6 modify anything. But it wouldn't necessarily have
7 to only be superusers, it could be other users
8 with lesser degrees of permissions as well.
9   Q. (By Mr. Angelis) Because those are the
10 people who -- well, what would those users want to
11 use this graphical user interface to do?
12   A. Like I said, to create, modify
13 virtualized operating systems.
14   Q. Let's turn to paragraph 23. In that
15 first sentence, at the end of that sentence, you
16 say that the structure for this claim element is
17 "a virtual storage device (e.g. a graphical
18 representation)."
19   Do you see that?
20   A. Yeah. Let me just read the sentence.
21   Q. Sure.
22   A. Yes.
23   Q. So you previously testified that a
24 virtual storage device is this virtualized system
25 that actually stores information, for example, and

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1 exists as a partition on a disk.
2   A. Um-hum.
3   Q. How is that a graphical representation?
4 Those two concepts seem discordant to me.
5   A. Right. Yeah. It's confusing, and
6 perhaps I wasn't as clear as I should be -- as I
7 could have been.
8   It's really the example, the e.g., that
9 is what I meant by this.
10   Oftentimes when I think of virtual -- I
11 have a very strong background in virtual reality
12 that I studied all through my Ph.D, and it's all
13 graphical, I mean 90 percent of it is stereoscopic
14 computer graphics presented through head mounted
15 displays.
16   So whenever I think of virtual, I have
17 this -- I'm predisposed to thinking of it as
18 graphical. But a virtual storage device could
19 also be, like I said, a physical disk that's been
20 partitioned into multiple pieces, multiple
21 partitions, for loading various virtualized
22 operating systems.
23   So I see why you have that question.
24 It's a little bit confusing. What I mean by that
25 is my example, a graphical representation.

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1   Q.   So the opinion then, would it be fair to
2   say that your opinion is that the disclosed
3   structure is a representation, a graphical
4   representation of a virtual storage device?
5   **A.   Yes.**
6   Q.   So then we get to the last sentence in
7   paragraph 23, which says, "The virtual storage
8   device is displayed on the GUI and may contain
9   virtualized operating systems, application
10   software, databases and memory, or partitions of
11   any of the preceding."
12   Do you see that?
13   **A.   I do, yes.**
14   Q.   How does a picture contain those things,
15   or does it just contain representations of those
16   things?
17   **A.   It contains representations of those**
18   **things, and perhaps the properties associated with**
19   **those things.**
20   Q.   And tell me a little more about what you
21   mean by "properties associated with those things."
22   **A.   Well, like for example I think we were**
23   **looking at Figure 16 and 17 of the '400 patent.**
24   Q.   Fair enough. So a partition, for
25   example, might be graphically represented as

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1   having a particular number of megabytes.
2   **A.   Right. Those are properties associated**
3   **with that.**
4   Q.   So the image contains those things to
5   the extent that it refers to the fact that the
6   actual virtual storage device is partitioned in a
7   particular way.
8   **A.   For that example, yes. Or is this**
9   **volume password protected. That might just be a**
10   **boolean checkbox, yes or no. The property is**
11   **password protected, yes or no. So that would be a**
12   **different example for a different property.**
13   Q.   So it's a visual guide to the user of
14   what resources the virtual storage device has.
15   **A.   Yeah, graphical and textual user**
16   **friendly visual guide.**
17   Q.   The picture doesn't actually contain an
18   operating system, for example.
19   MR. RAMEY: Objection; form.
20   **A.   Pictures do not contain operating**
21   **systems, no.**
22   **If your question was does the picture**
23   **have a label that says what version of the OS, or**
24   **was it can pictures contain an operating system?**
25   Q.   (By Mr. Angelis) It was the latter, but

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1   I just was using an absurd example --
2   **A.   Yes.**
3   Q.   -- to sort of make sure I understood the
4   situation.
5   **A.   Correct. I think you understood.**
6   Q.   So if the court were to decide that
7   "means for allocating a computer device's
8   resources" requires more than just an image that
9   the user can manipulate, and information in that
10   image about the underlying resources, do you agree
11   that there is nothing in the specification that
12   discloses the downstream operations or that are --
13   strike that. I think you've already answered that
14   question.
15   Let's move on to paragraph 24. Here you
16   opine that one can create a graphic representation
17   of the claimed cabinet and display it on the GUI
18   based on the teachings of the '400 patent.
19   Do you see that?
20   **A.   I do, yes.**
21   Q.   And the '677 patent and the '183 patent.
22   **A.   I see that, yes.**
23   Q.   What are you relying on for your
24   conclusion other than the '400 patent? What
25   portions of the '677 patent or the '183 patent are

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1   you relying on for this conclusion?
2   And I have them here, if you'd like
3   them.
4   **A.   Yeah, I wouldn't mind having them.**
5   **What this says is "one of ordinary skill**
6   **in the art could create the graphic representation**
7   **of the cabinet and display it on the GUI."**
8   **I think that creating the graphic**
9   **representation and displaying it on the GUI is**
10   **very well described in the '400 patent, there is**
11   **17 figures, as well as the specification that**
12   **talks about those figures, that talk about**
13   **creating a graphic representation of the cabinet**
14   **and displaying it on the GUI.**
15   **The '677 and '183 patent talk about some**
16   **of the downstream processes, if you will, as we've**
17   **been characterizing them.**
18   Q.   So are you relying on the '677 patent
19   and the '183 patent?
20   **A.   Not for the first part of that sentence.**
21   Q.   And you're not relying on it for any
22   part of that sentence, are you, any part of that
23   first sentence?
24   **A.   No.**
25   Q.   So the second sentence then says,

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1   "Namely, the '400 patent references prior art
2   systems and programs," and it goes on from there.
3   Do you see that?
4   A. Um-hum.
5   Q. Now, let's look at that column,
6   Column 3, lines 13-26 of the '400 patent.
7   A. Okay.
8   Q. What structure does Column 3 disclose,
9   that part of Column 3?
10   A. Well, the patentee is describing
11   various, I'll call them GUI frameworks, that can
12   be used to create graphical user interfaces. And
13   there is many more, but this is a subset of
14   graphical user interfaces, both hardware and
15   software, techniques. Xwindows is a framework.
16   There was direct -- I think I mentioned a few of
17   them earlier in the deposition; Microsoft
18   Foundation Class, and Java AWT, and Java Swing,
19   and DirectX, Adobe Flash. I mean all these are
20   various graphical user interface toolkits to
21   program and create graphical user interfaces.
22   Q. And what do these disclosures tell a
23   person of ordinary skill in the art about how to
24   create a graphic representation of the claimed
25   cabinet and to display it?

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1   A. These are just -- these are all examples
2   of various frameworks that can be used to do it.
3   There are multiple options when you program
4   applications, including hypervisors, developers
5   have choices as far as what third-party software
6   to utilize as part of their solution.
7   Q. So if I'm a developer, I'm a person of
8   ordinary skill in the art, and I want to create a
9   cabinet that has these different options that are
10   discussed in the '400 patent, I would know that
11   these software tools would allow me to do that?
12   A. Yeah, these are some of the options that
13   you could use.
14   For Windows, I think MFC, Microsoft
15   Foundation Class, would be a great choice. You
16   could use GL, which stands for graphic language,
17   or OpenGL, which is an open source version of it.
18   You could use Adobe Flash. If you were in Java,
19   you could use Java AWT, which is Advanced Widget
20   Toolkit.
21   There is a lots of different options,
22   and each one, as I said early in the deposition,
23   has their own set of methods that you would use to
24   draw a rectangle, to draw a circle, to draw a
25   line, to put a text box, to make a drop-down

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1   window. They're libraries of functions that are
2   options for the developers to utilize.
3   Q. And the reference to subentities here,
4   does that mean anything more than that it was
5   known to basically create a hierarchical GUI at
6   this time?
7   MR. RAMEY: Objection; form.
8   Q. (By Mr. Angelis) Let me know if you're
9   having trouble finding the subentities. It's in
10   line 20 or 21 of Column 3.
11   A. Thank you. I'll just read the full
12   sentence.
13   Yes. I mean I read this in my review of
14   the '400 patent. I did not read this reference,
15   '998 patent, so I guess I'd want to go down one
16   level deeper to offer my opinion as to what
17   subentities means.
18   It could be a hierarchical layout, which
19   is often done in graphics, so that you've got
20   containers with other widgets inside, and if you,
21   let's say, move the whole container, everything
22   inside it moves. Or if you set a property at a
23   upper level, something higher in the hierarchy,
24   that will propagate down. It could mean that.
25   It could also mean just something like

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1   subentities or different widgets; a checkbox, a
2   radial box, a drop-down list, could be considered
3   subentities.
4   And I'd want to review the '998 patent
5   to opine which of those two versions, or if it was
6   a third variant the patentee may have been
7   referring to.
8   Q. Fair enough. So for purposes of your
9   opinions in paragraph 24, what you were getting at
10   is just that these programs would allow the user
11   to essentially create a graphical user interface
12   that looks like the interface discussed in the
13   '400 patent.
14   MR. RAMEY: Objection; form.
15   A. Yes, that these are some of the multiple
16   tools. And I mentioned other tools as well.
17   Q. (By Mr. Angelis) And again, this is
18   just for drawing the graphical user interface
19   rather than creating the actual virtual storage
20   device itself.
21   MR. RAMEY: Objection; form.
22   A. That's correct, yes.
23   Q. (By Mr. Angelis) Let's move on to a new
24   claim. Claim 16 of the '400 patent is discussed
25   in paragraph 25 of your declaration, and it's very

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1   similar, but it's in a different claim.
2   And here we're talking about -- what I'm
3   going to do is read it as I think it was meant to
4   be drafted, rather than as it's literally drafted,
5   which is "means for allocating a computer device's
6   resources to at least one operating system on said
7   computer device."
8   Do you see that?
9   A. I do, yes.
10   Q. So on paragraph 27, this is very similar
11 to paragraph 19. Again, so you relied on the '183
12 patent, the '677 patent, and the '400 patent, as
13 well as your knowledge of one of ordinary skill in
14 the art as of September 1999 to form your
15 opinions.
16   A. That's correct.
17   Q. And this is the complete list of what
18 you relied on to form your opinions.
19   A. Yes. And it's -- I mean all this is
20 responsive to Mr. Goodin's declaration.
21   Q. Fair enough.
22   So you formulated these opinions in the
23 context of Mr. Goodin's declaration.
24   A. Yes.
25   Q. Let's look at paragraph 28. So here,

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1   once again you're talking about some structure
2   that you say is disclosed in claim 16.
3   Do you see that?
4   A. I do.
5   Q. And this is very similar to what was in
6   paragraph 20; correct?
7   A. Yes.
8   Q. So if I were to ask you the same
9   questions I asked you with respect to paragraph
10 20, would your testimony be the same?
11   A. It would, yes.
12   Q. Let's look at paragraph 29. It again
13 refers back to your statements in paragraph 21.
14   Do you agree that the claim language at
15 issue here is very similar and essentially
16 identical to the claim language we were talking
17 about with respect to Claim 1?
18   A. Well, it's certainly very similar. I'd
19 want to look at both claims to say if they were
20 identical or not. But just right off I can agree
21 that they're very similar, yes.
22   Q. Well, let me ask it this way, because I
23 don't want to trick you into anything.
24   The questions that I asked you about
25 this claim, about the claim element at issue in

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1   Claim 1, if I were to ask you the same questions
2   with respect to this claim element, would your
3   testimony be the same?
4   MR. RAMEY: Objection; form.
5   A. Yes, it would.
6   Q. (By Mr. Angelis) So paragraph 30 is
7   essentially the same as paragraph 22 of your
8   declaration; is that right?
9   A. 30 is the same as which paragraph?
10   Q. 22.
11   A. Correct.
12   Q. And so do you agree that the testimony
13 you gave in response to my questions related to
14 paragraph 22 would be the same for this paragraph
15 if I were to ask those same questions again?
16   A. Yes.
17   Q. So the first seven lines of paragraph 31
18 are very similar, and maybe the same, as the
19 opinions you provided in paragraph 23; is that
20 correct? And take a minute, of course, to
21 confirm.
22   A. Yeah, they follow each other. They're
23 very similar.
24   Q. So you'd agree that the testimony you
25 gave regarding paragraph 23, likewise applies to

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1   the opinions expressed in the first seven lines of
2   paragraph 30.
3   A. I agree.
4   Q. Excuse me, paragraph 31. I misspoke.
5   A. Yes, I agree.
6   Q. And again, I'm not trying to be
7   disrespectful here, I'm just trying to be
8   efficient with all of our time.
9   A. I appreciate that, too.
10   Q. So then at the end of paragraph 31 there
11 is a sentence that begins "Further various
12 Figures," and then it goes on from there.
13   Do you see that?
14   A. I do.
15   Q. So this is new. And first you refer to
16 Figures 11-14 of the '183 patent.
17   A. Um-hum.
18   Q. So is it your opinion that Figures 11-14
19 provide corresponding structure for this claim
20 element?
21   A. Well, does the claim element, you know,
22 with regard to your question, does the claim
23 element end with "on said computer device"?
24   Q. Yes, that's what I'm talking about. I'm
25 talking about "means for allocating a computer

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1 device's resources to at least one operating
2 system on said computer device."
3   A. Okay. And we've talked about this
4 already, much during this deposition, how the '400
5 patent, in my opinion, is focusing on the front
6 end and the graphical user interface, and the '183
7 and the '677 patent brings in elements of the back
8 end.
9   So to the extent that one of skill in
10 the art wanted to duplicate this invention, if you
11 will, or create such a system on his or her own, I
12 feel that the '183 and the '677 patent would be
13 instrumental in that effort for the back end
14 piece.
15   But if we're just talking about the
16 front end piece of the graphic user interface,
17 then I think that the '400 patent could stand
18 alone, as I said earlier.
19   Q. And to give structure to the claim
20 element that we're talking about here, do you need
21 the back end piece? Are you relying on the back
22 end piece to fulfill the structure for the claimed
23 function here?
24   MR. RAMEY: Objection; form.
25   A. My read of this claim is that this is,

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1 as I testified earlier, that it's all about the
2 graphic user interface, how -- the purpose of it
3 is for allocating a device's resources. But how
4 it's done, the structure that allows it to be done
5 is the graphic user interface itself.
6   So I think the answer to your question
7 is to satisfy this claim element, one would only
8 need the '400 patent.
9   Q. (By Mr. Angelis) And for your opinion
10 you're relying only on the '400 patent as
11 structure to satisfy this claim element.
12   MR. RAMEY: Objection; form.
13   A. Unless the question or the discussion is
14 widened to the fact -- to bring in to the fact of,
15 okay, now the user's intention has been indicated
16 to the computer in a very user friendly way, such
17 as this graphical user interface that's been
18 disclosed, and now we need to send program code to
19 the disk controller to reformat partitions; if
20 you're talking about that second piece, the back
21 end piece, then the '183 and the '677 patent would
22 be helpful. I guess that's the best way I could
23 put it.
24   Q. (By Mr. Angelis) Well, let me ask this.
25 Can you actually allocate resources without the

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1 back end piece?
2   A. No.
3   Q. And for purposes of your opinion
4 regarding this claim element -- and forgive me,
5 your answers have been very helpful, I appreciate
6 them, but I just want to make sure I understand
7 this.
8   For purposes of your opinion on this
9 claim element, you are relying only on the
10 disclosures in the '400 patent.
11   MR. RAMEY: Objection; form.
12   A. Yes, because this claim element to me is
13 talking only about the graphic user interface.
14   Q. (By Mr. Angelis) Fair enough. That's
15 helpful. Thank you.
16   A. Um-hum.
17   Q. So the final sentence of paragraph 31
18 begins "Further various Figures, including, but
19 not limited to Figures 1-17 of the '400 patent,"
20 and it goes on from there.
21   Do you see that?
22   A. I do, yes.
23   Q. This really just encapsulate -- we've
24 already been talking about as to your opinions
25 regarding how one of ordinary skill in the art

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1 would be instructed to create this GUI; correct?
2   MR. RAMEY: Objection; form.
3   A. If you could -- I'm sorry, let me just
4 finish reading it and then you can ask your
5 question.
6   Q. (By Mr. Angelis) Go ahead. I'll strike
7 my question and ask a better one.
8   A. Okay. Please with your question.
9   Q. Sure. So we've been talking in this
10 deposition about how the figures in the '400
11 patent provide a guide to someone who wants to
12 design a graphical user interface that looks like
13 what's disclosed in the '400 patent.
14   Is that what you're intending to get at
15 with the final sentence of paragraph 31?
16   A. Yes.
17   Q. Paragraph 32 is the same as your
18 analysis in paragraph 24; is that right?
19   A. Yes, it is.
20   Q. So if I were to ask you the same
21 questions that I asked in connection with
22 paragraph 24, would your testimony be the same?
23   A. Yes.
24   Q. Let's move to the next element of
25 Claim 16 of the '400 patent, which is in paragraph

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1   33 of your declaration.
2   A.   Um-hum.
3   Q.   And it says "means for configuring said
4   at least one partition of said at least one
5   secondary storage device through said secondary
6   storage partitions window."
7   A.   Um-hum.
8   Q.   So in paragraph 35 you identify that you
9   relied on the '400 patent specification, the '677
10   patent specification, and the '183 patent
11   specification, as well as your knowledge of one of
12   ordinary skill in the art.
13   Is that the sum total of what you relied
14   on in formulating your opinions with respect to
15   this claim element?
16   A.   Yes. But as I said before, in response
17   to Mr. Goodin's declaration. But yes, I think the
18   answer is yes.
19   Q.   Thank you.
20   A.   Um-hum.
21   Q.   Now, in paragraph 36 the first sentence
22   says, "In my opinion, one of ordinary skill in the
23   art would look for the word configure (or
24   configuring) in the patent specification to find
25   structure associated with a 'mean for

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1   configuring.'"
2   Means for configuring.
3   A.   Yeah. It probably should say means for
4   configuring.
5   Q.   So did you go to the specification and
6   look for the words configure or configuring?
7   A.   Yes.
8   Q.   And in footnote 26 is where you found
9   them, those are the places where you found the
10   words configure or configuring; correct?
11   A.   Yes, that's correct.
12   Q.   And did you draft this part of this
13   paragraph, paragraph 36, yourself?
14   A.   These represent my opinions completely.
15   And I took the final edit of this declaration, so
16   it was likely modified to express my opinion. I
17   can't recall if I was the one that drafted this
18   first or not, if that's what your question is.
19   Q.   In footnote 26 it refers to Column 5,
20   lines 53-59 of the '400 patent.
21   A.   Um-hum.
22   Q.   Where in that excerpt is the word
23   configure or configuring?
24   A.   Perhaps there is a typo in the line
25   numbers then, if it's not there.

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1   Q.   And then footnote 26 also refers to
2   Column 8, lines 56-60.
3   A.   Eight, 56-60, okay.
4   Q.   And is the word configure there?
5   A.   No, it's not.
6   Q.   So is it fair to say that Column 5,
7   lines 53-59 do not form part of your opinion for
8   the construction of means for configuring?
9   MR. RAMEY: Objection; form.
10   A.   You said Column 5; and the line numbers
11   again, please.
12   Q.   (By Mr. Angelis) 53-59. That's where
13   we were looking earlier. And then Column 8,
14   56-60.
15   A.   Column 8, 56-60.
16   MR. RAMEY: For clarity, objection;
17   form.
18   A.   Again, let me just go back to the means
19   for configuring. Well, I wouldn't say it's fair
20   to say that they don't form -- you know, that
21   they're not part of my opinion. It is true that
22   they don't have the word configure there, but at
23   least Column 8, 56-60 is talking about various
24   elements that are used for configuring.
25   Let's look at Column 5, 53-59. Pull

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1   down menu, main toolbar. These are all elements
2   that are used for configuring as well.
3   So there does appear to be a typo
4   associated with which line numbers. And looking
5   for the word configure, you know, is not
6   contained. But I think the content in those
7   passages do relay the notion of tools or elements
8   for configuring.
9   Q.   (By Mr. Angelis) So you're relying on
10   those disclosures because they are tools or
11   elements for configuring.
12   A.   Yes.
13   Q.   In paragraph 36, as it goes on, there is
14   a block quotation from Column 7, lines 13-30 of
15   the '400 patent.
16   Do you see that?
17   A.   I do, yes.
18   Q.   And the claim element we're talking
19   about is the means for configuring a partition;
20   correct?
21   A.   Yes.
22   Q.   And you're not opining that this block
23   quotation talks about the means for configuring a
24   partition, are you?
25   MR. RAMEY: Objection; form.

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1   A.   Let me just finish reading the block
2   quotation.
3   Q.   (By Mr. Angelis) Sure.
4   A.   Yes, I am opining that this describes
5   the mean for configuring the partition.
6   Q.   Well, I see here, for example on
7   Column 7, lines 13-22, there is the discussion of
8   copying a partition into a cabinet.
9   A.   Yeah.
10   Q.   And then on Column 7, lines 22-25, there
11   is a discussion of removing a partition from a
12   cabinet.
13   A.   Yes.
14   Q.   But that's not the same thing as
15   configuring a partition, is it?
16   A.   Well, removing would, I think would be
17   one form of configuring.
18   Q.   Well, you're not changing the partition
19   at all, are you? You're just moving it or copying
20   it. You're not changing the way the partition
21   looks; are you?
22   MR. RAMEY: Objection; form.
23   A.   You're just removing it. I mean in
24   Column 8, certainly 22-29 is talking about
25   configuring a partition.

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1   Q.   (By Mr. Angelis) And Column 5 has the
2   same thing, right, Column 5, line 34 for example?
3   A.   Column 5, 34?
4   Q.   Yes. Column 5, line 34 -- I'm sorry,
5   33.
6   A.   Okay.
7   Q.   It says "configuring partitions in the
8   cabinet."
9   A.   Yes.
10   Q.   So that's configuring, right?
11   A.   Um-hum.
12   Q.   So then this excerpt refers to --
13   A.   Copying and deleting.
14   Q.   -- copying and deleting, correct?
15   A.   Yes.
16   Q.   So this excerpt doesn't actually have
17   anything to do with configuring a partition.
18   MR. RAMEY: Objection; form.
19   A.   Well, if you have a set of partitions,
20   deleting one of many I think would be a form of
21   configuring.
22   Q.   (By Mr. Angelis) Configuring the
23   cabinet or configuring the partition?
24   A.   Configuring the cabinet, yeah.
25   Q.   So you're really relying on other

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1   disclosures for configuring the partition --
2   A.   Yeah.
3   Q.   -- you're not relying on this --
4   MR. RAMEY: Objection; form.
5   Q.   (By Mr. Angelis) -- disclosure.
6   MR. RAMEY: Objection; form.
7   A.   Yes.
8   Q.   (By Mr. Angelis) We talked earlier
9   about some of the figures in the '400 patent and
10   what they show. So Figure 13, for example, I
11   think is one we both talked about. Actually
12   Figure 16 is probably a little bit better.
13   A.   Okay.
14   Q.   Figure 16 shows, would you agree, a
15   dialogue box that allows a user to configure a
16   partition?
17   A.   Yes.
18   Q.   And you've already testified that this
19   GUI would allow the user to, for example, express
20   an intention to the system to shrink the
21   partition, but that this patent doesn't disclose
22   how the downstream operations occur that actually
23   perform the shrinking of the partition.
24   MR. RAMEY: Objection; form.
25   Q.   (By Mr. Angelis) Is that correct?

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1   MR. RAMEY: Objection; form.
2   A.   When you say it doesn't, did you say it
3   doesn't disclose how it's done? Is that how you
4   characterized your question?
5   Q.   (By Mr. Angelis) I believe so. That's
6   what I meant to see if I didn't say it.
7   MR. RAMEY: Objection; form.
8   A.   I agree.
9   Q.   (By Mr. Angelis) So the claim language
10   here says "means for configuring said at least one
11   partition." And it says the configuration occurs,
12   and now I'm quoting, "through said secondary
13   storage partitions window;" is that right?
14   Did I read the claim correctly?
15   A.   Yes.
16   Q.   So doesn't the through or use of the
17   word "through" there indicate that the GUI itself
18   isn't the means for configuring, it's just the
19   vehicle by which the configuring occurs?
20   A.   Wait -- please finish your question.
21   Q.   I can clarify that, if you'd like.
22   A.   Um-hum.
23   Q.   That the through part of that claim
24   element encompasses the GUI, but that the claim
25   itself actually requires the modifying of the

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1   partition.
2   MR. RAMEY: Objection; form.
3   Q. (By Mr. Angelis) The configuring of the
4   partition.
5   MR. RAMEY: Objection; form.
6   A. That's not my read of the claim element.
7   My read would be to substitute the word
8   using, like through the use of, or basically using
9   the secondary storage partition window, and
10   anything that's a window is a GUI.
11   So this is describing a way that a user
12   can configure one or more secondary storage
13   devices using a GUI, using a secondary storage
14   partition window.
15   My read is very -- the way I'm reading
16   it is very clear to me that this is talking about
17   how the user uses a GUI to indicate how they want
18   the secondary storage partition, you know, in a
19   GUI, similar to Figure 16 of the '400 patent, or
20   17.
21   Q. (By Mr. Angelis) After the block
22   quotation in paragraph 36 there is a sentence that
23   I'm having a little trouble understanding.
24   A. Okay.
25   Q. And it says -- I'm just going to read

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1   the portions of it that are giving me trouble.
2   A. Well, can you read the full sentence?
3   Q. Sure. It says, "Further, the '400
4   patent specification specifically provides, in
5   Column 5, lines 17-22" -- and here's where we
6   start -- "that the resources of a computer system,
7   such as defining one or more cabinets containing
8   one or more partitions of software and/or other
9   data, is performed graphically with a keyboard
10   and/or mouse."
11   Do you see that?
12   A. I do.
13   Q. What does it -- if you drop out the
14   intervening dependent clause there, it would read
15   the resources of a computer system is performed
16   graphically with a keyboard and/or mouse; and
17   that's where I'm having a little trouble
18   understanding how this sentence fits together.
19   A. Um-hum.
20   Q. The resources of the computer system are
21   just things like memory, processing power, those
22   sorts of things; correct?
23   A. Yes.
24   Q. How are those resources performed
25   graphically?

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1   A. The resources are performed --
2   configured, maybe would be the better way. The
3   intention I'm trying to express to the reader is
4   that the resources are configured, they're
5   modified, they're added, they're deleted, they're
6   manipulated graphically.
7   That's really I think what we've been
8   talking about during the entire deposition, is how
9   the inventor seems to have -- not seems to have,
10   has provided a graphical user interface for
11   configuring resources for virtualized systems
12   using graphical user interfaces.
13   And I guess I'm just saying that yet
14   again and pointing to Column 5, 17-22, as further
15   evidence of that.
16   Q. And I think you already alluded to this
17   when you were talking about what we've already
18   been talking about, but the idea is that the
19   actual configuration is performed by the back end,
20   and that it's the user's intention that's being
21   expressed through the GUI; is that correct?
22   A. Well, they're both necessary, they're
23   both parts of the system, but the GUI handles the
24   front end in providing easy to use, highly usable
25   system that would be -- invoke low errors, you

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1   know. It's just a more convenient and intuitive
2   way to configure the system.
3   And then in the back end there would
4   need to be a program code for, let's say talking
5   to the disk controllers or talking to memory.
6   Q. And here in this sentence that begins
7   "Further," you're talking just about the front
8   end; correct?
9   A. Correct.
10   Q. So this claim limitation is directed
11   just to the front end, in your opinion.
12   MR. RAMEY: Objection; form.
13   A. I think I've answered it in the past
14   with the same way I'll answer it now, which is to
15   the extent that this is talking about the
16   graphical user interface, I think that's fully
17   disclosed in the '400 patent. And the claim
18   limitation, it's talking about the '400 patent and
19   the graphical user interface.
20   To the extent one wants to expand the
21   conversation in what would be needed to implement
22   the back end, one would have to and would want to
23   bring in the '677 patent and the '183 patent.
24   Q. (By Mr. Angelis) So your opinion is
25   that a keyboard and/or a mouse could be used to

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1 instruct the system to configure a partition.
2   MR. RAMEY: Objection; form.
3   **A. A keyboard and a mouse would certainly**
4 **be used, but there is more than that as well;**
5 **there is the whole graphical user interface as**
6 **well. The keyboard and the mouse would be**
7 **hardware that would be used to interact with the**
8 **graphical user interface.**
9   Q. (By Mr. Angelis) So then in paragraph
10 36 we have this language "Further various Figures,
11 including, but not limited to Figures 11-14 of the
12 '183 patent."
13   Do you see that?
14   **A. I do, yes.**
15   Q. And that continues on to the end of that
16 paragraph.
17   This is the same text that was in
18 paragraph 31 of your declaration --
19   **A. Okay.**
20   Q. -- is that right?
21   **A. Yes.**
22   Q. And so for purposes of your opinion, is
23 it fair to say that the identified means for
24 allocating and the identified means for
25 configuring are the same thing?

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1   **A. Yes.**
2   Q. And regarding my questions earlier, in
3 connection with paragraph 31 related to your
4 reliance on the '183 patent and the '677 patent,
5 if I were to ask those same questions with respect
6 to paragraph 36, would you give the same answers?
7   **A. I would.**
8   Q. Paragraph 37 and paragraph 38 are the
9 same as paragraphs 31 and 32; is that right?
10   **A. Well, 37 maps to 31, you say? Because**
11 **31 is a much longer paragraph.**
12   Q. I'm sorry. I was looking at the wrong
13 part of my outline, forgive me. Strike that.
14   On paragraph 37 you reference, you say,
15 "Therefore, one of ordinary skill in the art would
16 understand that the structure for" -- then you
17 reproduce the claim element -- "is a pointing
18 device such as a mouse, keyboard, program code or
19 the like."
20   **A. Yeah. And I would add on to that the**
21 **GUI itself, the graphical user interface that are**
22 **explained in the figures of the '400 patent.**
23   Q. Where would you add that in paragraph
24 37?
25   **A. Well, just along the list; pointing**

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1 **device such as a mouse, a keyboard, program code,**
2 **the graphical user interface. You can add that**
3 **anywhere, it's just a list of elements that are**
4 **needed.**
5   Q. So how is program code a pointing
6 device?
7   **A. I'm not saying program code is a**
8 **pointing device.**
9   Q. So what are you trying -- maybe you can
10 sort of back up a level of extraction and help me
11 understand what you're trying to say here.
12   **A. Yes. Well, everything is implemented in**
13 **code. So when you implement a GUI, you implement**
14 **it in code. We spoke about the graphical**
15 **frameworks. So to implement a GUI you need to**
16 **write some software to -- and that's program**
17 **code -- to utilize your mouse, you need -- well,**
18 **every developer usually doesn't write the code for**
19 **their mouse; that typically comes with the**
20 **operating system or comes with the mouse driver**
21 **that's been installed.**
22   **But program code is pervasive and**
23 **throughout. Nothing happens on a computer without**
24 **program code. So in a way it's just assumed and**
25 **inferred that there is program code everywhere.**

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1   **We're not talking about an artist**
2 **drawing pictures, we're talking about implementing**
3 **working, functioning software.**
4   Q. So what you're getting at here is that
5 the mouse or the keyboard interact with the GUI,
6 and there is program code to more or less create
7 or to support that interact -- to allow a user to
8 use a mouse or a keyboard to interact with the
9 GUI.
10   **A. Yes.**
11   Q. But the mouse, for example, is not part
12 of the graphic user interface.
13   **A. No, not -- I mean the physical mouse**
14 **itself isn't part of the UI, but there is the**
15 **representation of where the mouse is pointing,**
16 **which is a pointer on the screen, that could be**
17 **considered part of the graphical user interface.**
18   **And to go back to the question, there is**
19 **program code that not only interprets the movement**
20 **of the mouse to the movement of the screen -- of**
21 **the pointer on the screen, there is program code**
22 **that when the mouse button is pressed there is an**
23 **event that flows through the operating system that**
24 **essentially gets trapped by your application that**
25 **has to handle that event.**

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1   So there is various sets of -- there is
2   program code to implement the GUI, and to actually
3   draw the elements on the screen, and to know what
4   various hot spots, if you are, you know, what
5   elements are interactive on the screen and what
6   aren't. All of that represents program code for
7   various purposes.
8   Q.   And your answer would be the same for
9   the keyboard itself; the physical device is not
10 part of the GUI, but somehow the keyboard
11 manipulates the pointer on the screen? Or what
12 would your testimony be about the keyboard?
13   A.   Yeah. Keyboard is another input device
14 that I think we're all familiar with. Many of the
15 GUI elements would require, let's say a text entry
16 box. If you want to rename a cabinet, you would
17 utilize the keyboard to type in the new name of
18 the cabinet. So to interact with text entry boxes
19 would be one example.
20   You might use other keys, such as the
21 delete key. You might use the tab key to move
22 between active fields. There is lots of options
23 for developers.
24   I'm looking at Figure 16, the menu bar,
25 see File, View, Cabinet, Partition, et cetera, on

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1   the menu bar, Figure 16? Do you see how one of
2   the letters is underlined? If the user hits Alt F
3   they can, some control key, whether it's control
4   or Alt, typically Alt, they can expand that option
5   without using the mouse. So there is ways that a
6   keyboard can be used for interaction with a GUI
7   that are similar, but different, than the way a
8   mouse can be used for interaction with a GUI.
9   MR. ANGELIS: So it's about noon. Let's
10 just go off the record for a minute.
11   (Recess 12:00 noon to 12:24 p.m.)
12   Q.   (By Mr. Angelis) Dr. Rosenberg, let me
13 direct you to paragraph 39 of your declaration,
14 which discusses Claim 16 of the '400 patent.
15   And in particular the claim element is
16 "means for manipulating said at least one cabinet
17 record through said cabinet visible partition
18 window."
19   Do you see that?
20   A.   I do.
21   Q.   And in paragraph 41 you discuss what you
22 relied on in forming your opinions. I previously
23 asked you about the corresponding paragraph in all
24 of your other opinions. If I were to ask you the
25 same questions, would your testimony be the same?

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1   A.   Yes, it would.
2   Q.   Now, in paragraph 42 you opine that the
3   means for manipulating a cabinet record should be
4   interpreted as -- and this is four lines down --
5   "to configure, or change, memory partitions or
6   data."
7   Do you see that?
8   A.   Yes, I do.
9   Q.   And that's the same definition you had
10 for the prior claim term, which is means for
11 configuring at least one partition. Is that
12 right?
13   A.   Correct. Yes.
14   Q.   So you've identified the same when
15 you've assigned the same meaning to both claim
16 terms essentially.
17   MR. RAMEY: Objection; form.
18   A.   I don't know if I would say that. I
19 mean they're two different claim terms.
20   Are we talking about means for
21 configuring said at least one partition of said
22 one -- of said at least one secondary storage
23 device through said secondary storage device
24 window versus means for manipulating said at least
25 one cabinet record? So a cabinet record versus a

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1   secondary storage device -- partition, so second
2   storage devices?
3   Are those the two claims term that
4   you're saying are the same?
5   Q.   (By Mr. Angelis) Well, I'm just asking
6   if for both of those claim terms what you have
7   said is that the means -- you've said they're both
8   "to configure, or change, memory partitions or
9   data," and that's in paragraph 42 --
10   A.   Okay.
11   Q.   -- and in paragraph 36?
12   A.   Yes, I agree.
13   Q.   And in both cases you have identified
14 the same structure to perform the function,
15 correct?
16   A.   Correct. There may be typos too, as you
17 pointed out before, though it seems to be copy and
18 paste.
19   Q.   You're referring, for example, to
20 footnote 33.
21   A.   33 versus 26, yes.
22   Q.   In both instances the words for
23 manipulating might not appear, for example, in all
24 of those.
25   A.   I think earlier we were looking for

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1 configuring, means for configuring versus means
2 for manipulating, so perhaps this was for the
3 manipulating one. We'd have to go back and check.
4   Q.   Do you recall I asked you earlier about
5 the portion of the claim term that began with the
6 word through, and in this case it would be
7 "through said cabinet visible partition window"?
8   A.   Um-hum.
9   Q.   If I asked you the same set of questions
10 I asked with respect to the prior claim term
11 regarding partitioning, would it be the same, that
12 you would construe the word "through" as
13 essentially meaning using?
14   A.   I would, yes, that's correct.
15   Q.   And where there is text in paragraph 42,
16 for example, that is the same as text in earlier
17 paragraphs, like paragraphs 31 and 36, if I were
18 to ask you about that text, ask you questions
19 about that text, would your answers be the same as
20 they were for the corresponding text in the
21 earlier paragraphs?
22   MR. RAMEY: Objection; form.
23   A.   Generally yes, I mean if they're
24 complete sentences that are the same.
25   Text can be shorter than complete

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1 sentences, so I'd hesitate to give a blanket it's
2 the same if it was just portions of sentences that
3 were differing. But I would say in general, if I
4 repeat the same sentence as my opinion, it's fair
5 to say that it applies in both places.
6   Q.   (By Mr. Angelis) In paragraph 44, the
7 first sentence refers to -- well, let me ask it
8 this way -- strike that. Let's start again. I
9 think your last answer actually covers it; I was
10 going to ask you about paragraphs 43 and 44.
11   Let's move on to the claim element
12 "means for modifying said at least one cabinet
13 record through said cabinet visible partition
14 window," which is discussed in paragraph 45 of
15 your declaration.
16   A.   Yes.
17   Q.   Now, in paragraph 47, you once again
18 address the materials you considered in
19 formulating your opinions with respect to this
20 claim element. If I were to ask you the same
21 questions I've been asking throughout this
22 deposition beginning with paragraph 19, would your
23 testimony be the same in response?
24   A.   It would, yes.
25   Q.   And with respect to footnote 39, you've

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1 already testified, so I can just represent for
2 example that the word manipulate or manipulating
3 doesn't appear in any of those excerpts.
4   A.   Well, we were look for configuring
5 before, when we first looked through those.
6   Q.   That's right. And so here where it says
7 "modify or modifying" and it says -- I look for
8 where the word modify or modifying appears in the
9 patent specification, it wouldn't surprise you
10 that the word modify or modifying doesn't appear
11 anywhere in those excerpts in footnote 39.
12   MR. RAMEY: Objection; form.
13   A.   If it doesn't then that was a typo and a
14 mistake. And modifying does appear in the '400
15 patent, so I guess I would just be relying on
16 other sections than are listed here.
17   Q.   (By Mr. Angelis) So in paragraph 48,
18 once again you indicate that this claim term is
19 defined as "to configure, or change, memory
20 partitions or data." And that's from the fourth
21 line to the fifth line of paragraph 48.
22   Do you see that?
23   A.   I do, yes.
24   Q.   And that's, again, the same disclosure
25 of structure that we talked about with respect to

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1 the prior claim terms, the means for partitioning
2 and the means for manipulating -- means for
3 configuring and the means for manipulating.
4   A.   That's correct.
5   Q.   So again, you're identifying the same
6 structure as performing for this function as you
7 did for the prior functions; is that correct?
8   A.   That's correct, yes. And I go on to say
9 Column 5, lines 17-22, in the next sentence too --
10 or two sentences down.
11   Q.   And there you're talking, again, about
12 things being "performed graphically with a
13 keyboard and/or mouse."
14   A.   Correct.
15   Q.   Your prior testimony about the graphical
16 user interface and the pointer is applicable to
17 this set of opinions as well, isn't it?
18   A.   Yes.
19   Q.   And this claim element likewise uses the
20 word through, "through said cabinet visible
21 partition window;" is that right?
22   A.   Yes, that's correct.
23   Q.   And again, your testimony would be that
24 that's essentially -- you construe that as meaning
25 essentially using.

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1   A. Yes.
2   Q. And then the reference to certain
3 figures of the '183 patent and the '677 patent,
4 the statements, for example in paragraph 48, are
5 the same as in the prior paragraphs we discussed.
6 So if I were to ask the same questions, would your
7 testimony be the same with respect to those
8 disclosures?
9   A. They would.
10   MR. RAMEY: Objection.
11   THE WITNESS: Sorry, go ahead.
12   MR. RAMEY: Objection; form.
13   A. It would be, yes.
14   Q. (By Mr. Angelis) In paragraph 49 you
15 refer to "configuring said at least one
16 partition."
17   Do you see that?
18   A. I do.
19   Q. And obviously this claim element doesn't
20 involve configuring a partition.
21   Do you have that in there just to
22 emphasize that the structure that you've
23 identified for all these claim elements is the
24 same?
25   A. I think that's a fair statement, and

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1 that's my opinion, that -- so the answer is yes.
2   Q. And paragraph 50 is very similar to
3 prior paragraphs we've discussed, for example
4 paragraph 24 -- I'm sorry, not paragraph 24 -- 44.
5   A. Yes.
6   Q. And the statements that are at issue
7 there are the disclosures that you're relying on
8 in the '677 patent, the '400 patent, and the '183
9 patent. So if I were to ask you again the same
10 questions that I asked with respect to those
11 disclosures in the past, would you provide the
12 same testimony?
13   A. I would, yes.
14   Q. Let's move on to Claim 28 of the '400
15 patent, which is discussed in paragraph 51 of your
16 declaration.
17   A. Um-hum.
18   Q. The first claim element we're talking
19 about reads "program code for accessing and
20 displaying each of at least one partition of at
21 least one secondary storage device."
22   Do you see that?
23   A. I do, yes.
24   Q. Now, we talked a little about program
25 code before, and you mentioned, for example, there

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1 is program code that allows the interface between
2 a peripheral and a pointing device to occur. And
3 there is program code, for example, that allows
4 files to be copied from one location to another.
5 Is that correct?
6   A. That's correct, yes.
7   Q. And you would agree, would you not, that
8 there is no program code disclosed in the '400
9 patent?
10   MR. RAMEY: Objection; form.
11   A. Well, I guess I don't know if it's right
12 in this section of my declaration. So I mean we
13 don't see source code listed in the '400 patent,
14 if that's your question. I'll just answer it
15 succinctly. There is no source code that's
16 listed.
17   But my understanding, I guess I've been
18 informed that the disclosure of program code may
19 have additional legal implications, of which I'm
20 not fully knowledgeable of; if a patentee
21 discloses program code that that may be a full
22 disclosure in itself. Again, I'm not a lawyer.
23   To answer your question very succinctly
24 and directly, I don't see any instances of source
25 code listed in the '400 patent.

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1   Program code potentially could take many
2 forms, too. We talk about algorithms that could
3 be displayed in flow charts or natural language,
4 in prose. I think the USPTO says that structure
5 can be defined in terms of an algorithm that can
6 be expressed in either a flow chart or prose.
7   Anyway, please let me know if that
8 doesn't answer your question.
9   Q. (By Mr. Angelis) Let me ask you this.
10   A. Um-hum.
11   Q. Other than the natural language
12 algorithm you identified in paragraph 21 --
13   A. Um-hum.
14   Q. -- what other algorithms, flow charts,
15 or the like are you relying on as examples of
16 program code?
17   A. Well, the '400 patent references the
18 '183 patent, and there is a whole set of flow
19 charts. And essentially structure diagrams or
20 class diagrams that are in the '183 patent that
21 someone -- you know, anyone reading the '400
22 patent would be directed to and would be able to
23 reference.
24   Q. Can you point me to the portions of the
25 '183 patent you're relying on as structure for the

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1 program code limitation in Claim 28?
2   A. Yeah. Will you hand me the '183 patent?
3   Q. Of course.
4   A. I actually say it here in 53, on the top
5 of the first page of 53, "Further various Figures,
6 including, but not limited to Figures 11-14 of the
7 '183 patent disclose program code or algorithms in
8 the way of flowcharts and Figures 3-10 and 15-19
9 contain block diagrams of data structure(s)."
10   Q. And that's what you're relying on as the
11 structure for the program code referred to in this
12 element Claim 28 discussed in paragraph 51.
13   A. I think that's part of it, but not the
14 entirety of it. I kind of consider it all
15 together.
16   There is disclosure. And for the
17 displaying piece of it, program code for accessing
18 and displaying, we talked about the various
19 graphical APIs, application program or interfaces,
20 and frameworks, that could be utilized, such as
21 Xwindows and MFC and the like. Those all
22 represent program code for creating GUIs.
23   Q. I'm sorry, you are saying those are in
24 the '400 patent or are you referring to the --
25   A. Those are in --

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1   Q. -- '183 patent?
2   A. -- the '400 patent. That was --
3 remember the VGA and the Xwindows? You remember
4 that paragraph? I can point you to it. It's
5 right here, Column 3, lines 13-17.
6   Q. So that's the program code you are
7 relying on -- that's the structure you are relying
8 on for the displaying portion of this claim
9 element.
10   A. Well, that's part of it. I mean there
11 is other areas too. Talking about, was it five --
12 where they talk about the mouse and the keyboard.
13 But these are different examples of graphical user
14 interface frameworks that all consist of program
15 code, that one of skill in the art would utilize
16 and incorporate into their projects to create
17 GUIs.
18   MR. ANGELIS: Let me mark the '183
19 patent here.
20   (Exhibit 53 marked for
21   identification.)
22   Q. (By Mr. Angelis) If you could just show
23 me which parts of the '183 patent you're relying
24 on for your opinion with respect to this element
25 of Claim 28 of the '400 patent.

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1   A. Figures 11-14. And it's the -- so these
2 are various flow charts that describe the various
3 steps and decisions that the software needs to do
4 in order to access and display information related
5 to partitions. Those are the flow charts in
6 11-14.
7   And then also there were some block
8 diagrams that give more example of structure.
9   Q. That's Figures 3-10 and 15-19 of the
10 '183 patent?
11   A. Yeah. I'm just verifying that. I
12 believe so.
13   Q. And I believe you testified that you
14 relied on the fact that the '400 patent references
15 the '183 patent; is that right?
16   A. I believe so. Toward the beginning I
17 recall seeing that.
18   Q. You're referring there to Column 1?
19   A. Yeah. Which line number?
20   Q. I'm sorry, Column 1 line eight at the
21 very top to about eleven. It doesn't actually
22 reference the patent number, and I believe the
23 application number has a typo in it. But I
24 believe that's what you're referring to.
25   A. Okay. Yes.

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1   Q. Is that right?
2   A. Yes. I was informed that the '400
3 patent references '183, and that I should review
4 the '183 as well. So if you're telling me that
5 it's tied through the application number that has
6 a typo, then that's how it would be tied together.
7   Q. And you were told by counsel?
8   A. That's correct.
9   Q. What were you led to understand about
10 the impact of this reference on your work for
11 purposes of claim construction?
12   A. I wasn't told anything about, you
13 know -- I wasn't told anything, just that the '400
14 patent references the '183 patent, so you may want
15 to consider the '183 patent as well.
16   Q. Were you told you could rely on the '183
17 patent?
18   A. I don't think it was put in that -- I
19 don't recall the actual words, but just, you know,
20 will you please consider or you may want to
21 consider, I forgot how it was positioned.
22   Just like I said, the '400 patent
23 references the '183 patent that I think came
24 before it, I believe. I didn't trace any patents
25 or look at the validity issues of any patent, so I

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1 just took that at face value that there was a
2 reference from the -- of the '183 patent in the
3 '400 patent. And if you're saying that this
4 application number, that perhaps has a typo, is
5 what ties it together, then that would be the
6 connection.
7   Q. As we discussed you then relied on the
8 '183 patent to provide some structure for this
9 claim element.
10   A. Yes.
11   Q. In paragraph 56 -- let me back up to 55,
12 if you don't mind. Now, this text, at least the
13 first sentence here, is very similar to our
14 discussion we had before about the interaction
15 between program code and a pointer device.
16   Let me ask this a slightly different
17 way.
18   The excerpt here referenced in footnote
19 45, the block quotation in paragraph 55, talks
20 about using a mouse to copy partitions to a
21 cabinet.
22   We've already talked about this;
23 correct?
24   A. Yes.
25   Q. How does this relate to the claim

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1 element of program code for accessing and
2 displaying?
3   A. Yeah, I think as before, it's perhaps
4 not as applicable a disclosure or references as
5 other places in the '400 patent. The figures --
6 well, certainly I mean they point to Figure 10,
7 let me go to that. Almost every figure in the
8 '400 patent is dealing with displaying, and there
9 is inferred accessing too because it's showing
10 parameters associated with it.
11   Like for example Figure 10, we see
12 Disk 0 is 2.46 megabytes, and it's formatted
13 FAT-16. And this is a display using the GUI.
14   So I think there is elements within this
15 block quote that do talk about the accessing --
16 that, you know, show one of skill in the art that
17 there is necessarily accessing going on and
18 displaying going on.
19   Q. Below the block quotation is the same
20 sentence we talked about before, about the
21 resources of a computer system. If I were to ask
22 you the same questions I asked before regarding
23 this sentence, would you provide the same
24 testimony?
25   A. I would, yes.

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1   Q. Then below that is the language again
2 "Further various Figures," and it refers to these
3 various figures in the '183 and the '400 patents.
4   A. Yes.
5   Q. And I've asked you about those before.
6 If I were to ask you the same questions I asked
7 before regarding this part of your opinion, would
8 your responses be the same?
9   A. Yes.
10   Q. Now, in paragraph 55 there is a sentence
11 that says, the top of the page, "One of ordinary
12 skill in the art would be able to create the
13 program code necessary for creating and
14 manipulating the disclosed graphics."
15   Do you see that?
16   A. I do.
17   Q. What program code are you referring to?
18   A. This would be using program code such as
19 the various GUI frameworks. Such as Xwindows or
20 MSC or Java AWT, the many different frameworks
21 that would be incorporated into the project, and
22 then calls would be made against that framework
23 against that API to initiate -- to create graphics
24 to create a GUI.
25   THE REPORTER: I have one question.

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1   And then -- would be made against that
2 framework.
3   THE WITNESS: Calls.
4   A. So sometimes they're called methods or
5 calls or functions.
6   Q. (By Mr. Angelis) So your opinion here
7 is that one of ordinary skill in the art would
8 basically be able to use the disclosed programs in
9 Column 3 of the '400 patent to design this
10 particular graphic user interface.
11   A. Yeah, I think that's one disclosure.
12 Yes.
13   Q. What else did you mean, if anything, by
14 the statement "One of ordinary skill in the art
15 would be able to create the program code necessary
16 for creating and manipulating the disclosed
17 graphics"?
18   A. I think that's largely what I meant.
19 Most developers will not try to re-create the
20 wheel. When it comes to 2D computer graphics,
21 there is lots of libraries out there. So
22 utilizing one of the several that were mentioned
23 in the '400 patent would be a good choice.
24   One could re-create the wheel and
25 program their own graphics library, actually have

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29 (Pages 110 to 113)

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1   to interface with the display card. There is a
2   frame buffer associated with the graphics card.
3   And you can, at a very low level, you can draw
4   lines from one pixel to another and you can start
5   creating widgets, you can create your own buttons
6   and all the various elements that we all take for
7   granted in 2D computer graphics.
8   So it's not a necessity that one utilize
9   a third-party framework for computer graphics, but
10   it's almost always done because it's relatively
11   easy to incorporate these open source libraries,
12   if you will, for doing that.
13   Q.   And is there anything in the '400
14   patent, other than what's in Column 3 that we
15   talked about before, that would provide one of
16   ordinary skill in the art with the ability to
17   create the program code necessary?
18   MR. RAMEY: Objection; form.
19   A.   Well, I mean there is a couple different
20   places we've been talking about. I think in
21   Column 3, those were the disclosure of various
22   graphic systems such as Xwindows, I recall being
23   one, and VPA and SVPA. Yeah, that's in Column 3
24   starting around line 13.
25   Q.   (By Mr. Angelis) Let me be a little

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1   more precise.
2   MR. RAMEY: Were you done with your
3   answer?
4   A.   I was going to say that there were other
5   areas that we've been talking about, I think it
6   was in Column 5. Let's see. We were talking
7   about another area that talks about using the
8   mouse and the keyboard, which is kind of a
9   different section.
10   So I think your question was was this
11   Column 3 reference the only place that you think
12   there is disclosure around using, you know -- my
13   statement, "One of ordinary skill in the art would
14   be able to create the program code necessary for
15   creating and manipulating the disclosed graphics."
16   Well, manipulating the disclosed
17   graphics would probably require a mouse and/or a
18   keyboard. So I think that other passage that I
19   referred to would be good to bring in as well,
20   that talks about the mouse and the keyboard.
21   Q.   But how is that program code?
22   A.   Well, like I said, a mouse and a
23   keyboard won't do anything without program code.
24   Every device needs a driver, at the very least, to
25   interface with the operating system to be able to

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1   pass events to the operating system. And then the
2   application developer needs to write additional
3   program code to handle those events, and to call
4   various functions or to write your own functions
5   to describe what happens when that event happens.
6   You know, when Alt F is pressed on the keyboard,
7   what should happen in your program?
8   Q.   So I just want to make sure I understand
9   here. Your testimony is that one of ordinary
10   skill in the art would sort of inherently know how
11   to write this program code. Other than what we
12   talked about in Column 3, where there is
13   disclosure of particular software products, for
14   example, I'm not seeing any disclosure of code or
15   products or anything that a person of ordinary
16   skill in the art would rely on, unless I'm missing
17   something.
18   Is there something you can point me to?
19   MR. RAMEY: Objection; form.
20   A.   I think that one of ordinary skill in
21   the art, computer science, human factors, would be
22   well versed in designing and implementing user
23   interfaces. And this is part and parcel of
24   designing and implementing using interfaces, is
25   creating the program code.

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1   Like I'd said earlier, it's not just
2   pictures, it's not just static pictures, this is
3   actual working code that has behavior and
4   interaction. So you won't get any of that
5   interaction without program code.
6   Q.   (By Mr. Angelis) And I just need to
7   button this up. So there is a disclosure in
8   Column 3 that we talked about, then there is some
9   disclosures we talked about where the
10   specification refers, for example, to using the
11   keyboard or mouse --
12   A.   Yes.
13   Q.   -- as a pointing device.
14   Other than those, you're relying on the
15   inherent knowledge of one of ordinary skill in the
16   art as to how to create the program code necessary
17   for creating and manipulating the disclosed
18   graphics; is that fair?
19   MR. RAMEY: Objection; form.
20   A.   Yes.
21   Q.   (By Mr. Angelis) Thank you. In
22   paragraph 56 of your declaration you refer to the
23   natural algorithm.
24   Are you relying on the natural algorithm
25   as program code only to the extent that it

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1 discloses, again, the use of the mouse, for
2 example, or the keyboard as a pointing device?
3 **A. That would be part of it. And the other**
4 **part is the disclosure of various graphical**
5 **frameworks that can be used as well.**
6 Q. Let's move on to Claim 28, paragraph 57,
7 the element that says "program code for
8 configuring said at least one partition of said at
9 least one secondary storage device through a
10 secondary storage partitions window."
11 Do you see that?
12 **A. I do.**
13 Q. Now, in paragraph 58 you refer to
14 Claim 16.
15 Do you see that?
16 **A. I do, yes.**
17 Q. So that's just a typo?
18 **A. That is a typo, yes.**
19 Q. And in paragraph 59, the first part
20 before the word Further, it's just the same
21 paragraph we've been talking about for a while.
22 So if I were to ask you the same questions I have
23 asked you about the basis for your opinions, would
24 you provide the same testimony?
25 **A. In general, yes. But where do you see**

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1 **"Further"?**
2 Q. I'm sorry, at the bottom of page 59.
3 **A. Of paragraph 59.**
4 Q. Excuse me, at the bottom of paragraph
5 59.
6 **A. Yes.**
7 Q. Before that the text we've been seeing
8 before usually didn't have that sentence Further.
9 **A. Right.**
10 Q. This is the first instance in which that
11 sentence appears.
12 **A. Um-hum.**
13 Q. So let's talk about that for a minute.
14 It says, "Further, I am informed by counsel that
15 phrases like 'program code' have been found by the
16 Courts to connote sufficient structure such that
17 the phrase 'program code' is not a means plus
18 function limitation."
19 Do you see that?
20 **A. I do see that.**
21 Q. And you briefly talked about this
22 earlier, but what exactly were you told by
23 counsel?
24 **A. Just that there is sufficient that**
25 **one -- really not much more than this, just that**

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1 **the courts have interpreted that if a patentee**
2 **discloses the word "program code" that that's**
3 **sufficient.**
4 **And I guess what I inferred from this,**
5 **although I wasn't told, is that there wasn't the**
6 **need to go forth and to put various examples or to**
7 **write source code in the patent to show, you know,**
8 **that the inventor was in possession of the**
9 **invention, or that a third party could re-create**
10 **the invention without undue experimentation.**
11 **I was really told not much more, nothing**
12 **more that I can recall, than there is some case**
13 **law that the term "program code" has some**
14 **additional legal meaning, of which I'm not really**
15 **privy to.**
16 Q. Were you provided copies of the case
17 law?
18 **A. No, I wasn't.**
19 Q. Did you do any research on your own to
20 look at cases and find out whether this is
21 correct?
22 **A. I did not, no.**
23 Q. Does your opinion regarding Claim 28
24 depend upon the correctness of what you were
25 told -- let me be more specific -- that "program

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1 code" has been found by courts to connote
2 sufficient structure?
3 **A. It does not depend on that, no.**
4 Q. So you were providing an opinion that
5 even if these are means plus function claim
6 elements, that there is sufficient structure in
7 the '400 patent specification.
8 **A. That's correct, yes.**
9 Q. And we've established before that you're
10 also relying on the '183 patent specification; is
11 that right?
12 **A. That's correct, yes.**
13 Q. And for this claim element you're
14 relying on the '183 patent specification and the
15 '400 patent specification in the same way that you
16 were for the prior claim element in Claim 28;
17 correct?
18 **A. In Claim 16? Isn't this the first one**
19 **in 28?**
20 Q. I don't believe so. I believe paragraph
21 51 that we've already talked about also --
22 **A. The answer to your question is yes,**
23 **you're right. Yes.**
24 Q. Now, paragraphs 60 to 62 are essentially
25 identical to paragraphs 54 to 56 that we already

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1 talked about; is that right?
2   A. They're essentially identical to which
3 paragraphs?
4   Q. 54 to 56.
5   A. Yes.
6   Q. So if I asked you the same questions for
7 those paragraphs as I had about 54 to 56, would
8 your testimony be the same?
9   A. Yes.
10   Q. Let's move on to paragraph 63. What I'm
11 going to do is do this all at once, if we can, to
12 be very efficient.
13   In paragraph 64 you have a reference to
14 Claim 16 again.
15   Do you see that?
16   A. I do.
17   Q. So that's the same typo as before,
18 correct?
19   A. Correct.
20   Q. So everywhere that appears, Claim 16, in
21 connection with a discussion of Claim 28, you
22 meant to put Claim 28; is that right?
23   A. That's right, yes.
24   Q. So I won't ask you that again.
25   Paragraph 65. I don't know if you have

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1 somewhere to write this down, but I'm going to try
2 to do this efficiently.
3   Paragraphs 65, 71, 77, and 83 are all
4 essentially the same. And what I'm going to ask
5 you, after you have a chance to confirm that fact,
6 is whether if I asked you the same questions that
7 I previously asked regarding the sentences in that
8 paragraph, if your testimony would be the same.
9   A. And you're comparing these to earlier
10 paragraphs for earlier claim elements?
11   Q. That's right.
12   A. Yes.
13   And again, as I testified earlier, if
14 this complete sentence is the same, and even if
15 the complete paragraph is the same as the previous
16 paragraph, only referring to a different but
17 similar claim element, the answers to questions
18 would be the same as the previous claim element.
19   Q. And that answer may also resolve my next
20 question, but I'm going to give you another series
21 of paragraphs.
22   A. Okay.
23   Q. 54 to 56, 60 to 62, 66 to 68, 72 to 74,
24 and 78 to 80 are all essentially the same.
25   A. So this is -- you're dropping back to

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1   previous claim elements when you going 54 to --
2   oh, are these pairwise? 54 to 56 you're saying is
3   the same as 60 to 62?
4   Q. Correct. Yes.
5   A. And then 66 through 68 is the same as 72
6 to 74; is that the second pairing?
7   Q. That's right. So it's a three paragraph
8 block that's repeated in multiple places.
9   A. And then the last pairing was 78 to
10 80 versus -- I think you gave five total numbers.
11   Q. Yes. So 78 to 80, 72 to 74, 66 to 68,
12 60 to 62, those are all the same as 54 to 56.
13   A. Oh, okay. All right. I'm with you.
14   Q. My question is if I were to ask
15 questions regarding each of those paragraphs, that
16 they're the same as the questions I previously
17 asked, would your testimony be the same?
18   A. Yeah, without taking the time to read
19 every word of those paragraphs, if the paragraph
20 is the same as the previous paragraph, only
21 applied to a different but similar claim element,
22 the answers to any question about the newer
23 paragraphs would be the same as -- the answers
24 would be the same as previously answered.
25   (Exhibit 54 marked for

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1   identification.)
2   Q. (By Mr. Angelis) Dr. Rosenberg, this is
3 just your CV. I just have a few questions from
4 your CV.
5   A. Okay.
6   Q. So just starting with your educational
7 background here on Exhibit 54, you have a BS in
8 Industrial Engineering from the University of
9 Washington right down the street. Is that
10 correct?
11   A. That's correct.
12   Q. What kind of computer science course
13 work did you take as part of that degree?
14   A. I took Fortran 77. Probably I took --
15 I'm trying to think of the year, that was probably
16 about 1985, 1984. I took a computer graphics
17 class, I forget the number, it was 3D computer
18 graphics class that I took as part of that. I
19 took several classes in programming robots.
20   This whole degree was about factory
21 automation essentially and factory efficiency, so
22 there was a strong focus on robotics.
23   I've been a software -- I've been a
24 programmer since eighth grade, which for me was, I
25 think 1977. I taught myself programming and have

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1   been programming since 1977, so long before I went
2   to college. I came into this degree knowing how
3   to program.
4   Q. Have you taught yourself object-oriented
5   languages and a lot of other languages?
6   A. Yes.
7   Q. And so you're referring here, for
8   example, in your summary of qualifications you
9   list for example C++, C, JAVA, UML, et cetera.
10 These are all languages that you routinely program
11 in?
12   A. Yes.
13   Q. What kind of experience do you have with
14 virtualized computer systems?
15   A. I have used virtualized computer systems
16 on many of the projects that I work on.
17 Starting -- well, starting with projects at
18 Boeing, for much of my career I was a contractor
19 at Boeing for about 1990 -- let's see. When did I
20 start? About 1997 I started as a contractor with
21 Boeing, and worked on Boeing projects through
22 2012, and there were several projects.
23   There is a big project on Army
24 communications that used VMware to running various
25 Linux operating systems to capture Army

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1   communications, digital communications of software
2   defined radios. This was starting probably in
3   2004 time frame, 2005, right in there. And that
4   continued on through 2010.
5   I worked on a big project for the
6   Department of Homeland Security through Boeing,
7   that we used virtualized systems to also running
8   Linux on top of Windows using VMware.
9   Q. And for those projects were there
10 multiple instances running on a single server, for
11 example?
12   A. There were, yes.
13   Q. Did you use any BIOS functionality of
14 the servers to choose between those different
15 instances?
16   A. Not that I recall, no.
17   There is others too, other projects that
18 I've used virtualization on.
19   Q. Have you, as part of your work, been
20 involved in designing the virtual systems that
21 were used?
22   A. No. I haven't been involved with
23 designing hypervisors, if that's what you're
24 asking.
25   Q. That's part of my question, but that's

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1   helpful. Thank you.
2   What about being involved in configuring
3   any of the virtual instances?
4   A. Oh, yes, definitely. That was my
5   responsibility, I mean one of my responsibilities.
6   Q. And you testified that you used VMware
7   to do that?
8   A. Yes, I've used VMware, but I've also
9   used Oracle VirtualBox. I used Oracle VirtualBox
10 on a Boeing project, big cyber security project
11 for Boeing. At home for my own development
12 projects I've used Fusion and Parallels running on
13 Mac. I've used VirtualBox at home.
14   Q. What experience do you have, if any,
15 with advanced power management tools that are part
16 of the BIOS for a particular computer system?
17   A. Well, just setting up computer system.
18 I've been building all my own computer systems
19 since about 1985 when the PCAT came out. So I'm
20 very familiar with buying components, installing
21 everything, installing software, configuring BIOS.
22 So I have experience in using various BIOSes to
23 configure computer systems and set them up to be
24 operable and optimal.
25   Q. Have you testified in a case involving

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1   virtualization?
2   A. I don't believe so. I don't think so.
3   I've used virtualization in cases before in order
4   to install older versions of operating systems.
5   Like for example, there is a case Edulog versus
6   DML where the company Edulog was creating school
7   bus routing software that would route school
8   buses. And they were creating this in the early
9   90s, mid 90s, and I needed to install a version of
10 Windows that was compatible with their software in
11 order to analyze it. So I would use VirtualBox
12 and install the proper version of Windows, and
13 install the software that wouldn't run on modern
14 versions of Windows.
15   Q. And have you testified in a case
16 involving BIOS management or advanced power
17 management?
18   A. Not about those issues, no.
19   Q. In your declaration in paragraphs 13 and
20 14 you opine about the level of skill of ordinary
21 skill in the art.
22   A. Yes.
23   Q. In paragraph 13 you say, "In my opinion,
24 a person of ordinary skill in the art as of
25 September 29, 1999 would have had a bachelor's

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1 degree in computer science, computer engineering,
2 human factors, or highly related field, and would
3 have had at least four years' experience in
4 software development, especially user interfaces."
5   A. Um-hum.
6   Q. Correct?
7   A. Yes.
8   Q. What is the art that you're referring to
9 in that paragraph?
10   A. Well, I guess this one would relate --
11 so is this a September 29, 1999 one you're
12 referring to?
13   Q. Yes, paragraph 13. That's right.
14   A. Paragraph 13. So the art would be what
15 would someone -- what would the qualifications and
16 experience that someone would want to have in
17 order to be able to understand and practice the
18 invention of the '400 patent. I guess maybe that
19 answers your question.
20   As far as what was disclosed in the '400
21 patent, kind of what background would someone need
22 to have to really understand that and be able to
23 capitalize on it in some way.
24   Q. And then I have the same question for
25 paragraph 14.

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1   A. Okay.
2   Q. Is it the same art that you're talking
3 about there, the skill in the art? Is it the same
4 art you're talking about?
5   A. Well, the art would be it's related to
6 the '677 patent.
7   Q. So for the '400 patent involving user
8 interfaces, a person of ordinary skill in the art
9 could have a degree in human factors, for example;
10 which is what you say in paragraph 13, is that
11 right?
12   A. Yes.
13   Q. And in paragraph 14, related to the '677
14 patent, in the art of -- they're all in the art
15 that's disclosed in the '677 patent, there the
16 degree would have to be in computer science,
17 computer engineering, or highly related field.
18   A. Which I consider human factors to be a
19 highly related field, or the equivalent I'd say,
20 or highly related. I guess highly related or the
21 equivalent. I guess you could group it under
22 either one.
23   Human factors is the intersection
24 between computer science and cognitive psychology
25 really. It's computer science focused on

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1 interfaces.
2   Q. And in paragraph 14 you refer to two
3 different bachelor's degrees.
4   A. Paragraph 14?
5   Q. Paragraph 14. I'm trying to understand
6 what you meant by that.
7   A. Oh, yeah. I'm sorry about the typos
8 through this declaration.
9   Would have a bachelor's degree in
10 computer science, computer engineering, or the
11 equivalent, and would have a bachelor's degree in
12 computer science, computer engineering. It's
13 repeated. It's a copy and paste past error.
14   I also see another error too. That
15 should be or would have at least four years' of
16 experience in designing computer.
17   I don't think that one would necessarily
18 need to have experience in designing computer
19 operating systems in order to implement a
20 hypervisor. Perhaps it could be helpful.
21   But in general just knowing how to
22 program is what's needed. Being a good software
23 engineer, a good software architect, is what's
24 needed to implement a hypervisor; and that seems
25 to be largely what '677 is.

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1   Well, I won't fully opine on that. I
2 had a very limited scope in what I was asked to
3 do.
4   Q. So are you saying that the level of
5 ordinary skill in the art is different for the
6 '677 patent and the '400 patent?
7   A. Maybe slightly. I think that I could
8 easily come up with one definition of skill in the
9 art that would cover both, but I was trying to
10 give a nod toward that the patents are teaching
11 different parts of the system, like I said, the
12 front end versus the back end. I was just trying
13 to be more explicit, when perhaps that wasn't
14 required or necessary.
15   But I could come up with -- I could
16 combine these two. I think paragraph 13 would
17 cover the '677 patent as well. And I think with
18 the corrections, the typos that I spoke about,
19 paragraph 14 would cover the '400 as well.
20   Again, perhaps I was being overly
21 analytical in thinking it would be helpful to the
22 court to have two different sets of skill in the
23 art, because I think one could easily come up with
24 one definition of skill in the art that would
25 cover both. There is a lot of overlap already

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1   between these, as you can tell.
2   Q.   So let me make sure I understand this.
3   For paragraph 14 you're saying that it's obviously
4   one bachelor's degree that was --
5   A.   Yes.
6   Q.   It's not two, that was a typo.
7   A.   Correct.
8   Q.   And instead of being "and" it's "or."
9   That four years' experience in designing computer
10   operating systems would substitute for the
11   educational requirement.
12   A.   I think so. There is a lot of amazing
13   programmers out there that don't have any computer
14   science degrees, that are people that have taught
15   themselves to program from a young age.
16   So I think -- I mean look at Bill Gates,
17   right, why don't we consider him an expert
18   computer programmer, he did a tremendous amount
19   for the field. He does not have a computer
20   science degree.
21   So I didn't want to say that it's a
22   requirement to have a computer science degree to
23   be a good programmer. There is plenty examples
24   that we all know that that's not the case. Is it
25   helpful? Sure. I don't think degrees are ever

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1   hurtful to have the opportunity to have knowledge
2   in the field.
3   I think if you have experience designing
4   computer operating systems that's not a trivial
5   problem. So if you were proficient in your job
6   for four years of designing and implementing
7   computer operating systems, that to me is a proxy
8   of being a good software developer. You're likely
9   a competent software developer.
10   Q.   And you earlier I think said that you
11   thought that as revised, statement of the skill in
12   the art for paragraph 14 would also cover the '400
13   patent as well, paragraph 13; is that correct?
14   Did I understand you?
15   A.   As revised, as long as it's understood
16   that when I say or the equivalent or highly
17   related field, that that covers human factors as
18   well. Because, like I said, it's computer science
19   of user interfaces, also taking into account human
20   information processing and how we process
21   information.
22   Q.   So for paragraph 14, one could be a
23   person of ordinary skill in the art based on
24   experience alone, and that experience alone would
25   be basically in designing operating systems.

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1   Would that experience alone be
2   sufficient to make someone a person of ordinary
3   skill in the art for the '400 patent?
4   A.   I guess I'll just go back to my previous
5   answer. I think that one finds in the world
6   exceptionally talented programmers that don't have
7   educational degrees, they don't have bachelors of
8   sciences -- bachelor of science degrees and
9   computer engineering, computer science, human
10   factors, what have you.
11   So there are people that have taught
12   themselves to program and could implement what's
13   taught in the '400 patent or the '677 patent
14   without a degree. Those people do exist.
15   I don't mean to, and perhaps it's come
16   out that way through this declaration, have two
17   different sets of skill in the art, because I
18   think it's fungible in a way; you can find people
19   with no degrees that are exceptionally talented
20   and could implement either the invention in either
21   parent. You can find people with no experience
22   that just didn't have a summer job from day one,
23   graduate with a bachelor of science in one of
24   these fields, and could implement these as well.
25   So that's why I say it's fungible.

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1   Sometimes the experience helps, the
2   degrees help, but it's not a requirement in my
3   mind, in my opinion, that one have to have a
4   combination of both to be an effective programmer.
5   Q.   Let's turn now to the '677 patent.
6   (Exhibit 55 marked for
7   identification.)
8   Q.   (By Mr. Angelis) We're going to turn to
9   paragraph 83 of your declaration. And now we're
10   talking about Claim 1 of the '677 patent. And in
11   particular, a single element that's in bold face
12   in paragraph 83, "means for selecting one of said
13   virtual computer systems to become next operable
14   before suspending a currently operational virtual
15   computer system."
16   In paragraph 85 you refer to the
17   documents that you relied on in formulating your
18   opinion. Is this a complete list of what you
19   based your opinions on regarding this claim
20   element?
21   A.   It is, yes, as well as the knowledge of
22   one of ordinary skill in the art, I guess.
23   Q.   Right. And that's in paragraph 85 as
24   well, correct?
25   A.   Yes.

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1   Q.   Paragraph 86, which has the basis for
2   your opinion, refers only to the '677 patent; is
3   that right?
4   A.   It does, yes.
5   Q.   So did you rely on the '400 patent in
6   identifying structure that corresponds to the
7   function set forth in this claim element?
8   A.   No, I did not.
9   Q.   Did you rely on the '183 patent to
10   identify structure that corresponds to the
11   function set forth in this claim element?
12   A.   I certainly reviewed the '183 patent and
13   the structure that's in there. And I can't recall
14   if I found specific items in the '183 patent that
15   led additional support for what I mostly found in
16   the '677.
17   Q.   Would it help you to look at the '183
18   patent to see if you relied on it for any of the
19   structure that corresponds to the function we've
20   been talking about?
21   A.   Yeah. I'm sure -- I'm certainly happy
22   to page through it and see if something refreshes
23   my memory.
24   Q.   That would be great.
25   MR. RAMEY: It seems like we've been

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1   going over an hour, when we get done with this
2   pending question, can we take a short break?
3   MR. ANGELIS: Yes.
4   A.   Just seeing if anything jumps out at me.
5   Yeah, not that I see right now. I think that most
6   of the disclosure, if not all of it, is found in
7   the '677 specification.
8   Q.   (By Mr. Angelis) But you might have
9   relied on those figures we talked about from the
10   '183 patent, the flow charts for example?
11   A.   Yes.
12   Q.   In paragraph 86 you refer --
13   MR. RAMEY: Can we take that short
14   break?
15   MR. ANGELIS: Oh, I'm sorry. Forgive
16   me.
17   (Recess 1:41 p.m. to 1:57 p.m.)
18   Q.   (By Mr. Angelis) In paragraph 86 you
19   refer to the disclosed mechanism for switching
20   from one virtual computing system to another. And
21   the claim part of our platform does it by using,
22   and I'm going to quote here, "BIOS ACPI
23   enhancements/solutions with a switch flag and VTOC
24   Data Structure."
25   A.   Um-hum.

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1   Q.   Is that right?
2   A.   That's correct.
3   Q.   I want to try to conceptualize this for
4   myself in layperson's terms.
5   A.   Yes.
6   Q.   And feel free to read all of paragraph
7   86 first, to familiarize yourself with it.
8   A.   Okay.
9   Q.   And just to remind us, we're talking
10   here about the claim element is "means for
11   selecting one of said virtual computer systems to
12   become next operable before suspending a currently
13   operational virtual computer system."
14   So here is my question.
15   Assume there are three virtual operating
16   computer systems on a hardware platform, and the
17   hardware platform is about to suspend a currently
18   operational virtual computer system.
19   So where does the '677 specification
20   explain how the hardware platform selects which
21   virtual computer system will be next operable
22   before it suspends the currently operable one?
23   MR. RAMEY: Objection; form.
24   A.   So so far I've just identified the
25   mechanism that's used to suspend one operating

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1   system and position the next operable operating
2   system to take its place.
3   I don't recall, I didn't look through --
4   one second. Let me just read something real quick
5   here.
6   So in 86 what I'm talking about here is
7   a mechanism that the computer system would use to
8   switch from one operating system to another
9   without having undue delay, if you will. But I
10   would need to look more carefully through the '677
11   to find reference to where that selection is, in
12   your example if there is three of them.
13   I'm not pointing it out right there, you
14   know, what a user might do or not. I mean
15   obviously in the '400 patent that's covered very
16   clearly, that you can select a virtual cabinet and
17   the cabinet button bar, I think is the terminology
18   they're using. So that's where the selection
19   would take place in the '400 patent.
20   But I'd need to look through the '677
21   patent to find disclosure of -- if you're asking
22   like what does the user do to indicate to the
23   system where that selection takes place.
24   Q.   (By Mr. Angelis) And let me ask it this
25   way. I am, and the reason I'm asking it is

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1 because I read this claim as being directed to not
2 the mechanism for switching between instances, but
3 the means for selecting one of the virtual
4 computer systems to become the next operable.
5   Do you read this claim element
6 differently than that?
7   MR. RAMEY: Objection; form.
8   A. I think that's a fair read of the claim,
9 yeah.
10   Q. (By Mr. Angelis) So that's what I'm
11 looking for here. And let me ask, is it fair to
12 say that there is nothing in paragraph 86 that
13 addresses that issue? And by that issue I mean
14 the means for selecting the next operable system.
15   MR. RAMEY: Objection; form.
16   A. I think that's a fair characterization,
17 yes.
18   Q. (By Mr. Angelis) Paragraph 87. Well,
19 let me just ask one clarification. So virtual
20 computer operating systems in this claim element,
21 that term can refer to more than two systems,
22 right? My example was three systems, but you
23 would agree with me that the claim element
24 encompasses systems with more than two virtual
25 computer systems.

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1   A. I don't see anything as being limiting.
2 It's plural, virtual computer systems. So in my
3 mind that could be two or more.
4   Q. So it could be 10, it could be 15, it
5 could be some number more than two; correct?
6   A. Agreed.
7   Q. So the beginning of paragraph 87 says
8 "Claim 1 of the '677 patent further provides."
9   A. That should be Claim 3.
10   Q. That's what I thought.
11   And then paragraph 89 is just the same
12 as paragraph 85; correct?
13   A. Yes, it is.
14   Q. So if I were to ask you the same
15 questions I asked with respect to paragraph 85,
16 your testimony would be the same?
17   A. Yes.
18   Q. And paragraph 90 is essentially the same
19 as paragraph 86, isn't it?
20   A. Yes, it is.
21   Q. So if I were to ask you the same
22 questions that I asked with respect to paragraph
23 86, your testimony would be the same; correct?
24   A. That's correct, yes.
25   MR. ANGELIS: That is the end of my

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1 questions.
2   MR. GERCHICK: I don't have any
3 questions.
4   MR. SIEGEL: I don't have any questions.
5   MR. RAMEY: Can we take five minutes?
6   MR. ANGELIS: Sure.
7   (Recess 2:05 p.m. to 2:11 p.m.)
8   E X A M I N A T I O N
9 BY MR. RAMEY:
10   Q. Dr. Rosenberg, if I may ask a few
11 follow-up questions.
12   Previously in your testimony did you
13 intend to change your declaration in any way when
14 you were testifying?
15   A. No.
16   Q. Earlier you testified that you felt it
17 was a reasonable -- it was reasonable that there
18 was no structure to support the italicized portion
19 of paragraph 83.
20   Do you remember your testimony there?
21 That's "means for selecting one of said virtual
22 computer systems to become next operable before
23 suspending a currently operational virtual
24 computer system."
25   A. 83. And the question was -- say the

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1 question again.
2   Q. Do you recall your previous testimony on
3 that, that there was no structure in the '677
4 patent to support that means language?
5   A. Well, I don't know if that's exactly
6 what I said, that there was no structure.
7   I said that -- was it 83 or was it 86?
8 I think we were talking about 86 and how the ACPI
9 is accomplishing the chain -- is switching from
10 one virtualized OS to another virtualized OS.
11   Q. Dr. Rosenberg, have you ever used ACPI
12 functions or ACPI enhancements?
13   A. I have, yes.
14   Q. Can you please tell the court which ACPI
15 enhancements you have used?
16   A. I'm not sure. Some of the -- I mean
17 oftentimes when you have add-ons or enhancements
18 it's not clear to the user what's native and
19 what's an enhancement. But I've used advanced
20 configuration, power interface enhancement.
21 That's an open standard essentially on top of the
22 BIOS.
23   Q. Did those ACPI enhancements or solutions
24 you used have the ability to choose an operating
25 system?

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A. You could choose various disk partitions. So I guess by that nature you could choose an operating system. If you had a different OS on different partitions, you could choose which you wanted to suspend and which you wanted to be the master boot record.

Q. So is it your opinion then that those ACPI enhancements or solutions would be a structure for "means for selecting one of said virtual computer systems to become next operable before suspending a currently operational virtual computer system"?

MR. GERCHICK: Objection; form.

MR. ANGELIS: Object to the form.

A. Yes. Yes.

Q. (By Mr. Ramey) And your opinion is based upon your experience in using ACPI enhancements or solutions, correct.

MR. GERCHICK: Objection.

MR. ANGELIS: Object to the form.

A. Yes, it's in my direct experience of using BIOS ACPI.

Q. (By Mr. Ramey) And ACPI enhancements and solutions are mentioned in the '677 patent specification, correct?

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A. They are, yes.

MR. GERCHICK: Sorry, objection to form.

MR. RAMEY: Pass the witness.

MR. ANGELIS: Give me five minutes. I just want to see if I want to redirect.

(Recess 2:14 p.m. to 2:18 p.m.)

E X A M I N A T I O N

BY MR. ANGELIS:

Q. Dr. Rosenberg, without telling me the substance of anything that was said, did you talk to your counsel about the substance of your testimony during the last break? So the break between when I finished my questions, we finished our questions, and when Mr. Ramey started asking his questions.

A. Yeah. Mr. Ramey asked if I intended to change my testimony.

Q. Hold on, don't tell me about that.

You did discuss the substance of what he was going to ask you during that time.

A. What he was going to ask me. At a high level, high level and general I guess to clarify my opinion, I guess, yes.

Q. And you relayed to him how you would answer his questions if he asked them to you on

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the record?

A. I don't recall that, no.

Q. Did you do that?

A. No, I didn't. I told him -- I'd like to tell you what was said, but it sounds like you don't want to hear it.

MR. RAMEY: And we'd caution you not to say exact communications between us.

A. It would be easier to just say what I said. Let me just run it through my mind. You want me to mask what was said?

Q. (By Mr. Angelis) That's correct. I would like just to know whether he asked -- he told you what he was going to ask you. Did that happen?

A. I -- no, that didn't happen. I actually -- it became clear that it seems, and this wasn't my intention, that my testimony was changed, you know, written versus oral, which wasn't ever my intention.

So I said that, you know, maybe you should ask a clarify question, such as X. And I actually proposed a question that would I think help the court and you understand my opinion about this.

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Q. So did you tell Mr. Ramey to ask you a question about using ACPI enhancements?

A. Yes, I did. I said I thought it would be good if you asked me a question about if I've used it before and what they can accomplish.

Q. Anything else? Any other areas?

A. No.

MR. ANGELIS: That's all I have.

MR. GERCHICK: I have nothing more.

MR. SIEGEL: Nothing.

MR. RAMEY: We'll reserve the rest for trial.

(Discussion off the record.)

THE REPORTER: Is my understanding correct that the three of you wish to order a rough draft and Henderson has a standing order?

MR. ANGELIS: Yes.

MR. GERCHICK: Yes.

MR. SIEGEL: Yes.

THE REPORTER: Mr. Ramey, do you need a rough draft?

MR. RAMEY: No, just the final.

(Signature reserved.)

(Deposition adjourned at 2:25 p.m.)

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SIGNATURE

I declare under penalty of perjury under the laws of the State of Washington that I have read my within deposition, and the same is true and accurate, save and except for changes and/or corrections, if any, as indicated by me on the CHANGE SHEET flyleaf page hereof.

Signed in _____, Washington, this _____ day of _____, 2016.

CRAIG ROSENBERG
Taken: September 30, 2016

Re: GEMSA v Expedia
Cause No.: 2:16-cv-00095-RWS
Brenda Steinman, CCR.

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CERTIFICATE

STATE OF WASHINGTON)
) ss.
COUNTY OF KING   )

I, the undersigned Washington Certified Court Reporter, hereby certify that the foregoing deposition upon oral examination of CRAIG ROSENBERG was taken stenographically by me on September 30, 2016, and thereafter transcribed under my direction;

That the witness, before examination, was first duly sworn by me pursuant to RCW 5.28.010 to testify truthfully; that the transcript of the deposition is a full, true, and correct transcript to the best of my ability; and that I am neither attorney for, nor a relative or employee of, any of the parties to the action, or any attorney or counsel employed by the parties hereto, nor financially interested in its outcome.

I further certify that in accordance with CR 30(e), the witness was given the opportunity to examine, read, and sign the deposition, within 30 days, upon its completion and submission, unless waiver of signature was indicated in the record.

IN WITNESS WHEREOF, I have hereunto set my hand this date: October 5, 2016.

Brenda Steinman, CCR #2717
License expires 10/15/2016

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